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NONSPECIFIC REACTIONS IN ROUTINE BLOOD TESTING FOR SYPHILIS

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In a fourteen month period from December 1943 to February 1945 an investigation was sponsored by the Committee on Medical Research and the Venereal Disease Subcommittee of the National Research Council, supported by a grant from the Office of Scientific Research and Development, into the problem of the nonspecific positive (so-called "biologic false positive") reaction for syphilis. The bloods of Red Cross donors at the Philadelphia Blood Donor Center supplied the material, and the Institute for the Control of Syphilis at the University of Pennsylvania and the Graduate Hospital of the University of Pennsylvania conducted the case investigations. In all, 210,261 blood specimens were tested in a nine months period, and 79 of the donors showing definite positives ("unsatisfactory bloods") were subjected to subsequent critical clinical and laboratory examination. The studied series was enlarged to 98 cases by additional persons from private practice in whom possible nonspecific positive reactions for syphilis had been obtained largely in various forms of routine blood testing (premarital, industrial, general diagnostic practice).

The clinical histories and physical examinations were made by the staff of the Institute for the Control of Syphilis, no physician of less than two years' special experience in syphilis diagnosis being engaged in the work. All cases were subjected to still more experienced consultation and review. Additional laboratory tests were performed on simultaneously drawn specimens by the Boerner classification procedure at the Graduate Hospital of the University of Pennsylvania under the direction of Dr. Fred Boerner by a seven test "battery" at the Staten Island Research Center, United States Public Health Service, under the direction of Dr. John Mahoney, and in some cases by additional laboratories, including especially the Pennsylvania State Laboratory under Drs. Verner Nisbet and Claude Brown. A wide range of special clinical studies reinforced the physical examination (chest x-rays, cardiologic studies, slit lamp examinations and other work). Spinal fluid examinations, repetition of serologic tests, heterophile antibody reactions, brucellosis, typhoid agglutination tests and albumin-globulin estimations reinforced when indicated the preliminary survey. The results in each case were passed on repeatedly by a reviewing board[1] and a decision as to the diagnosis of syphilis or nonspecific serologic reaction was reached sometimes weeks and months after the case first came under study.

The results of this investigation of the serologic diagnosis of syphilis by routinized blood testing procedure were a surprise to the investigators and involve conclusions of interest to all physicians called on to evaluate blood tests for syphilis in general, special and industrial practice, and they have significance for public health and venereal disease control officers employing serologic tests for case finding purposes ("Wassermann barbeque"). The conclusions are here summarized, with recommendations, the detail of methods being published elsewhere.

Between January and September 1944, 489 out of 210,261 Red Cross donor blood specimens gave definite positive reactions to serologic tests for syphilis. This incidence of 0.23 per cent positives is substantially below even the low reported prevalence rates for the disease (0.5 per cent) in the Northwestern and Northeastern rural sections of this country as disclosed by serologic surveys. Certain selective factors were suspected, to wit: No donors were under age 20, 40 per cent were over 40 years; they were predominantly white (only 2,579 Negro donors); there were more females than males; the persons included were probably above the average in responsibility and conscience, and known sick persons and those having syphilis outright were probably largely excluded.

In the process of evaluation described, a diagnosis of syphilis was reached in three months in 69.2 per cent; in nonspecific positive cases in only 22 per cent. Of the nonsyphilitic positive cases, 78 per cent required more than three months for decision.

Only 40.5 per cent of the Red Cross donors with syphilis positive bloods were finally adjudged actually to have syphilis. The remainder, 59.5 per cent, were finally adjudged to have actual or probable biologic false or nonspecific positive reactions.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the University of Pennsylvania.

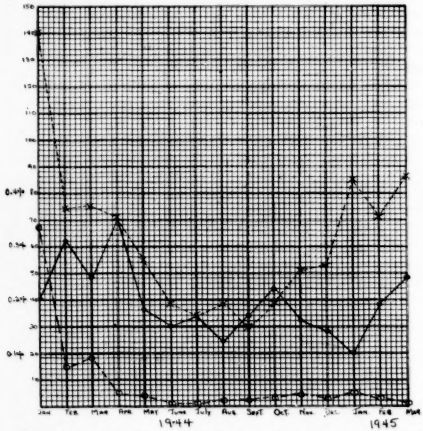
In addition to the responsible investigators, the following participated actively in this study: Herman Beerman, M.D., Norman R. Ingraham Jr., M.D., Louise E. Tays, M.D., Virgene S. Wammock, M.D., Henry G. Morgan, Surgeon (R) U. S. P. H. S., Stephen T. Whelan, M.D., Margaret J. Gerlach, M.D., on behalf of the Institute for the Control of Syphilis; Verner Nisbet, M.D., and Claude P. Brown, M.D., director and assistant director respectively, Pennsylvania State Laboratory, Philadelphia; and the United States Public Health Service Venereal Disease Research Laboratory, John F. Mahoney, medical director, United States Public Health Service, Staten Island, New York.

1. This reviewing board, in addition to the responsible investigators, consisted of the collaborating clinicians and serologists enumerated in the title page footnote.

Among possible selective influences in the incidence of biologic false positive, that of season was suspected. Two recognized disease sources of nonspecific positives, pneumonia and other respiratory tract infections, are known sources of nonspecific positives. The accompanying chart shows a parallel tendency in the incidence curves of pneumonia (deaths) and the percentage (by months) of nonspecific positiveness. The influenza parallelism is less definite (no second peak). Allowance must be made in all estimates for the difficulty of making a "diagnosis" of nonspecific positive or "biologic false positive reactor" in any given case. Only 3 cases in the series were adjudged to be technical false positives.

THE CLINICAL HISTORY AND EXAMINATION

The clinician's history and examination of this group as a means of differentiating syphilis from nonsyphilitic was, in contrast to its usual claims to "court of last resort" status, disappointing. The final resort was perforce too often serologic. With respect to history, there was a slight preponderance of recent vaccination,



Possible influence of season and epidemic infection on incidence of nonspecific positive blood tests. Broken line with x's, pneumonia death rate per hundred thousand, Middle Atlantic states; dashes with circles, influenza case rate per hundred thousand, Middle Atlantic states; solid line with black dots, incidence of "unsatisfactory" (seropositive reports) in donated bloods (in percentage of monthly totals). Note that the peak of incidence of pneumonia deaths and influenzal infections (upper respiratory tract disease known or suspected as responsible for "biologic false positives") corresponds fairly well to peaks in the incidence of nonspecific positives among Red Cross blood donors. There is even a one month lag, which has already been recognized as occurring in nonspecific positives due to respiratory tract disease.

upper respiratory infection, inoculations and recent febrile illness and infection in nonspecific positive cases. A significant clue was the preponderating "serologic discord" or history of conflicting serologic reports in nonspecific positives. A history of syphilis in the family or of primary and secondary manifestations in the patient was of little or no value.

In the physical examinatioin for "landmarks" of syphilis and "suspicion arousers," the yield of definitive findings was small, though better than from the history.

Not only were the symptoms and signs of the presence of syphilis equivocal, often unconvincing and hardly to be distinguished from signs and symptoms present in those ultimately adjudged after painful debate to be the victims of nonspecific positive serologic reaction, but sequences strongly supporting recognized causes of nonspecific positive reaction in accordance with our present knowledge of the subject were disappointingly few and far between.

The clinicians concerned, who had good reason to regard themselves as anything but "duds" in the field, soon learned the extent to which even experts may differ on points of physical examination particularly, involved, as suspicion arousers or diagnostic items, in the identification of syphilis. Opinion on the level of the liver, the presence or absence of true enlargement, the configuration of teeth and of bones, the shape and height of the palate, the interpretation of pupillary reactions and the interpretation of murmurs over the precordium were fertile fields of disagreement among both examiners and consultants.

In the physical examination, as might be expected, evidence for the presence of syphilis was found largely in examination of the eyes (including slit lamp study for vascularization of the corneas), characteristic teeth in congenital syphilis, the skeletal changes of congenital syphilis, the facies and the reflexes. It was quite characteristic of this investigation, as of private consultant practice at the present time, that congenital syphilis and neurosyphilis are the two chief clinical types uncovered by mass serologic testing.

SPECIAL STUDIES

The special studies made in response to apparent indications in the individual case (other than special serologic test procedures for syphilis) had a rather small positive yield. The high points are as follows:

Of 50 spinal fluids examined, 6 representing separate cases were abnormal.

Heterophile tests were performed a number of times in some cases.

In cases of syphilis none were over 1:112, 4 of 34 were suggestive (1:112), 12 per cent, and none were presumptive (1:224).

In nonspecific positive cases 11 of 58 were suggestive (1:112 and over), 19 per cent, and 6 of 58 were presumptive (1:224 and over), 10 per cent.

Radiographic examination of the chest showed abnormalities of some type in 12 of 41 cases, including 1 of active tuberculosis and 3 cases of pneumonitis; no virus pneumonia. Of 11 syphilitic cases examined, 3 showed abnormalities of the chest roentgenogram. Of 30 nonspecific positive cases examined, 9 showed abnormalities.

The special consultant on congenital stigmas identified 10 suggestive cases in 23 examinations. Only 6 such diagnoses (congenital syphilis) were finally accepted.

The special family study identified 1 syphilitic of 4; eye examination identified 4 syphilitic in 9 cases examined; the cardiovascular examination was suggestive in 3, and only 1 finally closed as syphilis.

The question as to whether every person who has a confirmed and persistent strongly positive serologic reaction should have a spinal fluid examination can, we feel, be answered with a qualified negative. If the course of the case under observation tends to support the suspicion that the serologic positive is syphilitic in origin, a spinal fluid examination is certainly indicated, but if the decline of the originally positive or doubtful blood to negative is reasonably prompt on weekly repetition, we feel that in the complete absence of clinical signs of syphilis the spinal fluid examination need not be insisted on. The yield of neurosyphilis in this material was small, hardly more than 10 per cent of the fluids examined being abnormal.

It is probable that, on the one hand, the infections of the nasorespiratory tract giving rise to nonspecific serologic reaction are either prostrating and severe and

hence do not appear in this material at the time it comes in for examination or are perhaps minor affairs in predisposed reactors or the results of highly specific infection complications.

The identification of congenital syphilis by the special consultant has well illustrated the uncertainties which minor abnormalities of no primary significance in themselves but "uncomfortable" when viewed in the aggregate arouse as to the status of an individual with no other explanation for his serologic picture; they give rise to the suspicion that the patient may have a mild case of congenital infection late in its course toward spontaneous recovery. It may be said, however, that physicians can afford to familiarize themselves better with the typical mulberry or Moon molar, equally with the hutchinsonian incisor, for this is an important and often surprising aid in diagnosis. The proper lighting of the face for the interpretation of the facies and for the presence of rhagades is also important. The tibia, like the liver, is a field for chronic difference of opinion among "experts" in the borderline cases.

THE SEROLOGIC STUDIES

The Boerner classification procedure, devised for the purposes of this study, is essentially an interpretation of simultaneously performed, exceptionally sensitive tests for the detection of flocculating and complement fixing reagin. The details of the technic are in process of publication.[2]

In the system of classification employed in the Boerner procedure, those reported as giving serologic reactions in groups 3 and 4 are overwhelmingly likely to have syphilis; those consistently reported in groups 1 and 2 are very unlikely to have syphilis.

In the Boerner classification procedure a consistently high titer of reagin is maintained from beginning to end of the serologic investigation in the syphilitic, while in nonspecific (biologic false) positives a low titer is maintained consistently from start to finish in approximately the same proportion.

In appraising the multiple test "battery" as a checking procedure as carried out by Dr. Mahoney, an outright comparison of the Mazzini, Hinton, Eagle, Kline exclusion, Kline diagnostic, Kahn and Kolmer procedures cannot be offered.

The very high rating of the Mazzini test in the detection of syphilis and also that of the Kline exclusion test (of which it might, of course, be expected), and the Kahn, could be recognized. On the other hand, all of the precipitation tests run quite high in the proportion of strong positives and of strong and moderate positives obtained in nonspecific blood serums. The Kolmer complement fixation (as performed in Mahoney's laboratory), on the other hand, while less sensitive in the detection of syphilis, is a notably safer resort than any of the precipitation tests except the Kline diagnostic for the avoidance of strong positives in the nonspecific field. The performance of the Kline diagnostic test quite closely resembles that of the Kolmer. Broadly speaking, then, one would be inclined to infer that a precipitation test should either not be used or should be paralleled by a dependable and sensitive complement fixation procedure in any and every serologic survey of a mass material in which nonspecific positives may appear.

2. Boerner, Fred: (1) A Quantitative Macro Flocculation Test for the Diagnosis of Syphilis; (2) A Quantitative Fixation of Complement Test for the Diagnosis of Syphilis, Echinococcus Disease, Malaria, Bacterial and Other Diseases; (3) A Method for Grouping and Classifying Serologic Reactions for Syphilis, to be published in the American Journal of Clinical Pathology and/or the Technical Supplement thereto.

In a detailed comparison within the Boerner classification procedure, of both the Lund flocculation and the Boerner fixation of complement tests, it was even more clearly evident that a highly sensitive flocculation or precipitation test must not be used alone or as a screen procedure unless one wishes to have a harvest of nonspecific positives. This now inescapable fact is one to which authorities having power to select a syphilis blood testing procedure should pay heed. A test such as the Lund will, as compared with a complement fixation test such as the Boerner-Lukens, allow only 4 syphilitic persons to escape diagnosis to be sure, instead of 16; on the other hand, the price paid for this superior sensitivity is the difference between 123 nonspecific positives by flocculation and 44 by complement fixation; in other words, 79 persons "unjustly" suspected of having syphilis. The Boerner-Lukens fixation of complement procedure gives only 32 strong positive tests in the nonspecific group as against 93 with the Lund precipitation. When, however, the two procedures are combined for interpretation in accordance with the Boerner classification, the results are superior in accuracy and certainly in interpretability by the practitioner. As judged by all criteria, clinical and laboratory, in this study, syphilis can be separated from nonspecific positiveness with a high proportion of correctness by the Boerner classification. It is of course conceded that a specific test for syphilitic reagin or for the nonsyphilitic reagin, if such exists, would be more satisfactory and dependable, if and when such a procedure is devised. On the other hand, with the Boerner procedure in this material, only 29 of a total of 242 nonspecific tests yielded positive results, and 213 were negative or doubtful. Of the tests on the serums of persons diagnosed as syphilitic, 114 were positive and only 16 were negative or doubtful.

THE DECISION AS TO WHETHER OR NOT A PERSON HAS SYPHILIS

It will be apparent that within the field of this somewhat selected material this study does not solve all the difficulties intrinsic to both the identification and the exclusion of syphilis in any individual case. It indicates, however, quite clearly that a disconcerting proportion of the serologic crop obtained by a routine test procedure on a large scale sampling of blood in a population group will yield a high proportion of nonspecific positives. Unquestionably, large numbers of persons have, both before and during the era of the "serologic barbeque" been subjected to treatment for nonsyphilitic or, rather, nonexistent "syphilitic" infection. The validity of syphilis prevalence figures in current use, as obtained from the premarital and antepartum syphilis-uncovering programs, Selective Service serologic data and so on may perhaps require reexamination. While the diagnosis of syphilis by history and physical examination may be an important aid in the early outspoken manifestations of the infectious period of the disease, these aids lose much of their worth as the infection passes into latency and even into the period of late manifestations. The discouraged physician and even the clinical expert will therefore be forced to lean on serologic procedure for the identification of the disease. Our own study, for example, furnished us with repeated warnings and to some extent with evidence of the inevitability of this leaning on the serologic results for diagnosis in the absence of any other basis for diagnosis. The clinician may expect to identify, if he is sufficiently expert, indubitable symptoms and signs of the disease

in a proportion of cases of seropositiveness dependent on the type of material with which he is dealing. Too often he will throw a weight of suspicion disappointingly small and based on slender and debatable evidence into the scales with the serologic test. He will not be able to diagnose syphilis by negative exclusion ("It's not anything else, so it must be syphilis"), that is, by failing to find a recognized cause for a nonspecific positive serologic reaction. At times he may even be compelled to "diagnose" syphilis and to advise its treatment for a patient who is so consistent a nonspecific positive reactor that one cannot trust the disproof of syphilis and must therefore consider it unsafe to believe that the person does not have the specific disease. With the advent of penicillin perhaps such diagnostic escapes will be too easily accepted and practiced.

The outright diagnosis of a nonspecific positive at the present time is laboratory rather than clinical—a consistent weak or doubtful positive reaction, its decline to negative within a "reasonable" time, currently estimated in the literature as approximately three months. A suggestion but certainly not a presumption in favor of nonspecific positiveness, in the majority of cases such as ours, may be raised by a record of intercurrent or recently antecedent infection, especially of the upper respiratory tract, accompanied by fever. The special test procedures to determine the character and location of such infection will usually be applied too late to be of material value in sustaining a diagnosis of nonspecific positive reaction. They therefore, at best, establish little more than a suspicion arousing type of reaction in the mind of the consultant, and the final decision again falls to the serologic test procedure and in the future, let us hope, to a specific physicochemical test for nonspecificity.

The serologic warnings of nonspecificity are again (1) consistent weak or doubtful positiveness, punctuated with occasional high titer precipitation reactions, (2) serologic fluctuation and discord, i. e. disagreement between tests and among laboratories, and (3) negative complement fixation with positive flocculation reaction. For the simplified and yet increasingly accurate differentiation of syphilitic from nonspecific positive serums on repeated testing, by a procedure easily available to well equipped serologic laboratories, this investigation offers the Boerner classification procedure as deserving of widespread trial even though it may presently be overtaken by a contribution from the physical chemists.

SOME PRINCIPLES SUGGESTED FOR ROUTINE BLOOD TESTING PROCEDURES

1. Mere routine blood serologic testing, without examination or questioning, will certainly lead to a proportion of nonspecific positives that will be expensive and serious for the individuals concerned and a source of error in statistical evaluation. The nonspecific positives obtained may run as high as 50 per cent, depending on the selection of case material, on the serologic procedures employed and on the rating given partial positives.

2. The best laboratories will give nonspecific positive serologic reports, but they will be fewer if a complement fixation technic is used and more easily interpreted if a quantitative precipitation test is matched against a quantitative fixation of complement test, as in the Boerner classification procedure.

3. The drawing of blood for serologic testing should be preceded or accompanied by:

(*a*) Questions:

Have you had or been treated for syphilis or gonorrhea?

Ask again and again.

Have you had malaria?

Have you had within a month a fever, cold, grip, pneumonia, severe sore throat?

Have you had any preventive inoculations within three months (tetanus, typhoid, smallpox vaccination)?

Have you had blood tests before? Results?

(*b*) At least a once over physical inspection:

Pupils.

Rashes (semistripped or stripped).

Oral mucosae and teeth.

Genitalia if possible or indicated.

Tibias.

Signs of intercurrent infection.

(*c*) Temperature, pulse, respiration. Auscultation of heart and lungs if above normal.

4. Nonspecific positives may be suspected if:

(*a*) There is a weak positive or doubtful serologic test result.

(*b*) There is a conflict between precipitation and complement fixation results.

(*c*) Even though a repetition is positive, the titer remains low and is fluctuant.

(*d*) There is a decline in titer to negative on weekly tests for one to three months, without treatment.

5. A syphilitic positive should be suspected if:

(*a*) The original and subsequent reaction are persistently of high or even low titer.

(*b*) The repetitions confirm each other over a three months period.

(*c*) There is clinical or anamnestic evidence of positive weight.

(*d*) The spinal fluid, after the aforementioned blood checks, is definitely abnormal, not alone with respect to serologic tests.

CONCLUSIONS

1. Examination of 210,261 Red Cross donor bloods disclosed 489, or 0.23 per cent, "unsatisfactory"—that is, seropositive in tests for syphilis (Kahn, Kolmer check).

2. Of 79 essentially unselected donors with positive serologic tests submitted to further extended clinical, serologic and other special studies, only 40.5 per cent were finally adjudged by a reviewing board to have syphilis.

3. The time required for a decision was less than three months in 69.2 per cent of the syphilitic, more than three months in 78 per cent of the nonspecific positives.

4. A suggestion of seasonal infection influence on seropositiveness appeared in the Red Cross material. Serologic surveys should be run in summer.

5. History and physical examination contributed little to differentiation of syphilitic and nonspecific positives.

6. Sharply defined clinical evidence supporting the nonspecific diagnosis is almost equally difficult to elicit.

7. Asymptomatic neurosyphilis and congenital syphilis were the two types of the disease, other than monosymptomatic seropositive latency, uncovered.

8. The detection of previously undiagnosed syphilis, now latent, in present knowledge is inevitably serologic.

9. Precipitation tests tend to be unreliable unless matched against complement fixation tests.

10. The syphilitic positive is a high titer, consistent positive on multiple repetition, precipitation and complement fixation confirming each other.

11. The nonspecific test is of low reagin titer, usually weak positive or doubtful but fluctuant, sometimes with strong positives; inconsistent as between precipitation and complement fixation, tending to be more positive in the former than the latter; tending toward negative within a three months period on weekly repetition.

12. The Boerner classification procedure offers an accessible method of interpreting serologic reactions.

13. Doubtful cases should be kept under prolonged observation. Even at the end of a year the diagnosis may still be undetermined.

ALKALI TREATMENT OF METHYL ALCOHOL POISONING

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For sixty years methyl alcohol has been recognized as a poison causing either death or blindness in a large percentage of cases. Recently we had under our care two groups of patients totaling 31 who had partaken of mixtures containing methyl alcohol and who showed clinical evidence of methyl alcohol poisoning. Of this group 5 died within three hours after admission to the hospital. The rest recovered and were returned to duty. It is our purpose to present the clinical and pathologic data found in this group and to demonstrate the value of the use of alkali therapy in the treatment of methyl alcohol poisoning.

In 1880 methyl alcohol was found to be toxic regardless of the port of entry, including the skin. The amount of methyl alcohol necessary to poison was found to vary considerably, depending on the tolerance of the individual. One man drank 1 pint of 10 per cent mixture daily without producing ill effects.[1] A single 4 cc. dose of methyl alcohol was a toxic dose in another instance.[2] It is recorded that 10 cc.,[3] 30 to 60 cc. and 180 to 240 cc. repeatedly caused death.[4] On the other hand much larger amounts have been taken without causing temporary or permanent injury.

It is commonly considered that methyl alcohol has a predilection for the retina and optic nerves. Degeneration takes place in the ganglion cells of the retina as well as nerve tissue elsewhere in the central nervous system. With this there is engorgement of the capillaries and edema. Furthermore, it has been shown both by postmortem and by experimental studies that methyl alcohol may cause acute parenchymatous degeneration of the kidneys, liver, heart and other organs.

The action of methyl alcohol, although slower, resembles ethyl alcohol in that it can produce intoxication. Ethyl alcohol is oxidized readily and excreted within twenty-four hours, whereas methyl alcohol may be present in the system for days. Methyl alcohol is not fully oxidized in the body but is broken down into formic acid and formaldehyde. Formic acid has been found in abnormal amounts eight days after ingestion [5] of methyl alcohol. Experimentally, formates were found in the urine of dogs five to six days after the administration of methyl alcohol. The intoxication upsets metabolism so that excessive amounts of lactic and other organic acids are excreted in the urine for days.[6] This disturbance commonly results in a profound acidosis which has long been recognized but not fully appreciated.[7]

The symptoms of methyl alcohol intoxication are usually delayed for nine to thirty-six hours, during which time an individual may continue to carry on. Suddenly weakness, headache, nausea and epigastric distress may appear, associated with dimness of vision. Blindness may follow rapidly, with an increase in the gravity of the condition. Within a few hours, dyspnea of the Kussmaul type and cyanosis may appear, resulting in death within an hour or so. If death does not supervene, coma may last for several days before improvement occurs. Permanent blindness is then a frequent result.

The diagnosis is usually made on the presence of a toxic state following ingestion of an alcoholic beverage, or other exposure to methyl alcohol, in which impairment of vision exists with dilatation of the pupils. Methyl alcohol and its derivatives can be found in the urine or gastric contents in abnormal amounts.

The treatment has consisted for the most part in the administration of fluids, gastric lavage and purgatives. The profound acidosis present in methyl alcohol poisoning prompts some to administer alkali with good results.[8] That this treatment is successful is amply substantiated by our results.

CLINICAL DATA

Table 1 presents clinical data on each of the 26 patients who recovered. The estimated maximum amount of methyl alcohol ingested was 540 cc. The minimum was 90 cc. The average amount was 222 cc. In addition many also drank beer in amounts ranging from none to 21 cans.

The symptoms of intoxication came on in about one hour in 1 case, while they did not appear for about forty hours in another. The average time from the first ingestion of methyl alcohol until the appearance of symptoms of intoxication was fifteen hours. Nausea, vomiting and abdominal cramps commonly occurred. The pupils of many were dilated. Fifteen patients reported blurring and dimness of vision. Several of these patients also had yellow vision. Eighteen had definite ophthalmoscopic findings in the fundus. This was chiefly congestion of the optic disk, and edema of the disk and the immediately adjacent zone of the retina. It is also noteworthy that 8 of the patients who had no visual symptoms did have objective changes in the ocular fundi. Mental symptoms such as dizziness and amnesia were commonly present. One patient was in coma about twelve hours yet lived. Those who were severely ill had dyspnea of the Kussmaul type. The respirations of the patients who died became rapid and shallow as coma deepened, with intense cyanosis, ending in respiratory failure. Treatment was instituted in our series of cases from eleven to thirty-seven hours after the first ingestion of methyl alcohol. The average time interval was twenty-seven hours.

Table 2 presents data regarding the carbon dioxide combining power of the plasma in 26 cases and data regarding treatment. The carbon dioxide combining

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This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

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power was diminished in all but 1 instance. The highest value on admission was 55, the lowest 12 and the average 26 volumes per cent. There was no correlation between the value of the carbon dioxide combining power and the amount of methyl alcohol ingested. Two patients had values of 12 volumes per cent. One had taken about 360 cc. of alcohol; the other had taken but 12 cc. As expected, those whose clinical condition was the worst had the lowest levels of alkali reserve and vice versa. Dyspnea was observed chiefly in those in whom acidosis was most pronounced.

Treatment was directed primarily toward overcoming the acidosis. Alkali was given intravenously in the form of ⅙ molar sodium r-lactate in isotonic solution of three chlorides. The amount given was guided by repeated plasma bicarbonate determination in conjunction with clinical indications. None was given in a few cases, while as much as 640 cc. of molar sodium r-lactate solution was given in another, within the first twenty-four hours. The average amount given during the first twenty-four hours was 291 cc. In addition, sodium bicarbonate was given by mouth or by gavage, starting with a dosage of 4 Gm. every fifteen minutes. The total amounts of sodium bicarbonate administered during the first twenty-four hours varied from 12 to 100 Gm. The average amount was 51.6 Gm. The total alkali administered both intravenously and by mouth during the first twenty-four hours varied between 16 and 140 Gm., calculated as sodium bicarbonate. The average was 73.8 Gm. There was a rough correlation between the original level of the carbon dioxide combining power of the blood and the amount of alkali given during the first twenty-four hours. In addition, fluids were forced by mouth.

Whisky was given in 1 ounce doses (30 cc.) every four hours for a day or two. The eyes were protected from the light.

The response to treatment was prompt in most cases, as indicated by both clinical and laboratory criteria. Within a few hours dyspnea, nausea, cramps and mental symptoms abated and there was a progressive rise of plasma bicarbonate. It was not possible to determine the plasma bicarbonate at short intervals throughout the period of treatment on this large group of patients. However, in none of the cases was the carbon dioxide combining power below 35 volumes per cent, fourteen hours after treatment was started.

The improvement of eye changes under this treatment was particularly gratifying. Within twenty-four hours subjective blurring of vision had cleared in many of the cases. Notable diminution of congestion and edema of the optic disk and retina occurred within two to three days. At the time of discharge from the hospital, which averaged two weeks, all but 4 patients had central vision as good as that previously recorded in their health records, and their fundi appeared normal. These 4 showed a slight degree of retinal edema and had a slight diminution of central vision, insufficient to interfere with their duties. They also had contraction of the peripheral fields of vision and 1 had a large cecocentral scotoma in each eye. In the three months since discharge 2 of these 4 patients have regained apparently normal vision and fundi. Both of the others have some pallor of the temporal sides of the disks. One has concentric contraction of the visual fields and the other still has large cecocentral scotomas which have not changed since his discharge from the hospital. Central vision is not seriously affected in either case.

TABLE 1.—*Amounts of Alcohol Drunk, Major Symptoms and Eye Signs, and Intervals Elapsing to Onset of Symptoms and Entry to Hospital in Twenty-Six Cases of Methyl Alcohol Poisoning*

Case	Estimated Intake of: Methyl Alcohol, Cc.	Estimated Intake of: Other Alcoholic Beverages	Interval Between Drinking and: Onset of Symptoms, Hrs.	Interval Between Drinking and: Entry to Hospital, Hrs.	Symptoms *	Eye Changes Noted †: On Entry	Eye Changes Noted †: On Discharge
1	540	2 cans beer	3	36	N, C, V, M	None	None
2	450	18 cans beer	20	36	N, C, V, M	None	None
3	360	3 cans beer	14	23	N, M	None	None
4	180	6 cans beer	12	23	N	None	None
5	150	0 cans beer	16	20	N, V	None	None
6	120	6 cans beer	17	20	N, V, M	E+, D+	None
7	210	12 cans beer	6	24	V, M	E+, D+	None
8	180	8 cans beer	10	35	N, V, M	None	None
9	180	10 cans beer	1	22	C, M	E+, D	None
10	150	0 cans beer	2	19	N, M	E+, D	None
11	90	3 cans beer	11	36	V, M	E+	None
12	180	8 cans beer	34	55	C, M	E+	None
13	300	2 cans beer	4	21	N, V, M	E+ +	None
14	180	10 cans beer	23	23	N, M	E+	None
15	150	21 cans beer	40	36	N	E+, D+	None
16	240	15 cans beer	2	19	N	E+, D+	None
17	300	0 cans beer	13	28	N, C, V, M	E+, D+	E
18	240	0 cans beer	None	37	None	E±	None
19	240	0 cans beer	21	24	V	E+	None
20	240	1 can beer	12	36	V, M	E+, D+	None
21	240	10 cans beer	10	13	N, C, V, M	None	None
22	150	4 rum cokes	24	39	N, V	E++++, D++, E+	Scotoma, atrophy
23	120	14 cans beer	14	16	M	E+, D+	
24	120	0 cans beer	7	11	V	E+	E+, contracted fields
25	120	0 cans beer	None	39	C, M	None	None
26	90	0 cans beer	32	37	V, M	E++	E+
Average	222		15	27			
Range	90-540		1-40	11-37			

* N, nausea, C, abdominal cramps; V, visual disturbance; M, mental symptoms (amnesia, unconsciousness).
† E, circumpapillary and papillary edema; D, decreased central vision.

REPORT ON FIVE DEATHS

There were five deaths. Four of these men were comatose and critically ill on admission to the hospital. One was conscious but lapsed into coma very shortly. They all were intensely cyanotic and had pronounced respiratory embarrassment. Response to therapy was

nil and they died in respiratory failure within three hours after admission. In each case heart action persisted for some time after respirations ceased.

Necropsies were performed in all 5 cases approximately forty-eight hours after death.

On inspection a characteristic pinkish red postmortem lividity was consistently present in all cases, involving chiefly the face, neck, shoulders, abdomen and thighs. This was probably due to the presence of an alteration product of hemoglobin similar to carboxyhemoglobin (HbCO) or methylhemoglobin ($HbCH_3$). There was cyanosis of the fingers and finger nails in all cases.

Cranial Cavity.—In all cases there was hyperemia of the pia-arachnoid but only a moderate accumulation of spinal fluid in the subarachnoid space. The brains weighed between 1,430 and 1,570 Gm., averaging 1,490 Gm., which represents an average increase of at least 100 Gm. above the usual brain weight. The ventricles were normal, and there were no parenchymal lesions. Microscopically there was evidence of cerebral edema in the form of widening of the perivascular and perineuronal spaces, loosening of the brain substance generally and swelling of glial cells. There was no evidence of hemorrhage or devastation necrosis.

Thoracic Cavity.—There was no accumulation of fluid in the pleural cavities in any case. All mediastinal structures were normal. There was moderate to severe hypostatic congestion of the lungs in all cases, and the weight of the lungs varied from 700 to 1,100 Gm.

Cardiovascular System.—The heart and great blood vessels were essentially normal in each case. The blood was uniformrly unclotted but was dark colored and not cherry red as it is sometimes described in this type of case.

Abdominal Cavity.—There was no increase of peritoneal fluid. All peritoneal surfaces were normal, and all abdominal organs appeared normal. The livers were uniformly paler than normal and weighed between 1,580 and 2,030 Gm., the average being 1,710 Gm., constituting some fatty infiltration in the form of small droplets; changes usually attributed to anoxia were present. Necrosis was not observed. The gastric contents were fluid and possessed no significant odor. The mucosa was hyperemic in all cases but 1. Other abdominal organs were normal.

Adrenals.—There was no necrosis or hemorrhage.

Urogenital System.—The kidneys were essentially normal except for moderate passive congestion. The urinary bladder in each case was normal except for mild mucosal hyperemia.

Anatomic Summary.—Examination revealed (1) cerebral edema, (2) hypostatic pulmonary congestion, (3) fatty infiltration of the liver and (4) passive congestion of all organs.

Toxicologic Examination.—Through the courtesy of Lieut. Comdr. L. J. Goldwater (MC), U.S.N.R., officer in charge of the Industrial Health Laboratory, Navy number 128, the following chemical examinations were performed:

Specimens of brain tissue were removed in each necropsy. Their methyl alcohol content ranged between 9.7 and 1.5 per cent by weight—sufficient in all cases to cause death.

A sample of fluid submitted and labeled "from bottle or canteen in barracks D" was found to be composed of practically pure methyl alcohol.

COMMENT

This group of cases demonstrates that the individual susceptibility to methyl alcohol varies considerably. There was no correlation between the amount ingested and the clinical picture, the eye changes or the level of the plasma carbon dioxide combining power.

It is important to appreciate that the action of methyl alcohol is slow. It produces a profound alteration in metabolism resulting in acidosis. Methanol or its products are not selective in their action, i. e., on the optic nerve, but affect many vital organs.

The treatment of this acidosis by sodium bicarbonate has been reported before; however, its importance has not been fully appreciated. Recently 2 men were admitted to this hospital who were in a party of 4 who drank "Ditto fluid" containing methyl alcohol about three weeks previously. Two had died. The remaining 2 have very little vision as the result of atrophy of the optic nerve. No alkali therapy was given, according to their records.

TABLE 2.—*Amounts of Alcohol Ingested, Degree of Acidosis and Amounts of Alkalis Used During First Twenty-Four Hours of Treatment in Twenty-Six Cases of Methyl Alcohol Poisoning*

Case	Estimated Intake of Methyl Alcohol, Cc.	Lowest CO_2 Combining Power Noted, Vol. %	Amount of Sodium Lactate Given Intravenously, Cc. of 1 Molar Solution	Amount of Sodium Bicarbonate Given by Mouth, Gm.	Total Amount of Alkali Given in 24 Hours Calculated as Sodium Bicarbonate, Gm.
1	540	39	400	48	82
2	450	25	40	92	95
3	360	25	0	28	28
4	180	29	0	80	83
5	150	29	200	60	77
6	120	25	200	29	37
7	210	25	400	32	66
8	180	55	160	20	33
9	180	32	200	20	37
10	150	29	600	39	86
11	90	..	40	72	75
12	180	..	40	80	83
13	300	22	400	24	58
14	180	33	0	24	24
15	150	33	200	12	29
16	240	26	200	40	57
17	300	12	480	52	92
18	240	22	0	70	70
19	240	14	320	86	113
20	240	24	640	100	154
21	240	28	160	60	73
22	150	21	640	86	140
23	120	28	320	48	75
24	120	12	320	86	113
25	120	..	0	16	16
26	90	21	480	50	90
Average	222	26	291	51.6	73.8
Range	90-540	12-55	0-640	12-100	16-140

Whisky was given to our patients because Røe[9] expressed the opinion that ethyl alcohol promotes the displacement of methyl alcohol from its intracellular attachments and therefore was considered beneficial in the early treatment of methyl alcohol poisoning. There was no correlation between the relative amount of beer or whisky ingested and the clinical condition of our cases, or their response to treatment.

TREATMENT

In view of the excellent results effected in our cases, the following treatment is recommended for methyl alcohol poisoning. When the patient is in shock and respiratory failure is imminent, nikethamide intravenously and oxygen in addition to the other general

9. Røe, O.: Clinical Investigations of Methyl Alcohol Poisoning, with Special Reference to Pathogenesis and Treatment of Amblyopia, Acta med. Scandinav. **113**: 558-608, 1943.

measures should be used. Immediate application of treatment is necessary, may be life saving and may prevent irreparable visual damage. Prompt elimination of the acidosis, we feel, is essential in the treatment of methyl alcohol poisoning.

1. Draw blood for the plasma carbon dioxide combining power. The plasma carbon dioxide may be down to 10 volumes per cent.

2. Then administer alkali immediately as follows:

(*a*) Put four 40 cc. ampules of sodium r-lactate molar solution into 1 liter of isotonic solution of three chlorides and give intravenously.[10]

(*b*) Give 4 Gm. of sodium bicarbonate by mouth every fifteen minutes for four doses. If the patient is comatose, give it by a stomach tube.

3. Following administration of the aforementioned amount of alkali, recheck the plasma bicarbonate. Then immediately repeat the administration of the sodium r-lactate isotonic solution of three chlorides and the sodium bicarbonate by mouth as outlined. It has been our experience that the course of alkali outlined will have to be repeated three or four times consecutively to result in the elevation of the plasma carbon dioxide combining power from 10 to 20 volumes per cent to 40 to 50 volumes per cent. When this point is reached it may be checked twice daily until recovery is complete. If facilities are not available for the estimation of plasma bicarbonate, the reaction of the urine may be used as a guide to the administration of alkali. In our cases we used this reaction to regulate the continued administration of sodium bicarbonate after the plasma bicarbonate had returned to nearly normal values. At that time we tested each voiding of urine and gave 2 Gm. of sodium bicarbonate each hour while the urine was below a p_H of 7.0. The same dose was given every two hours when the urine reached a p_H of 7.0. When the urine became alkaline to phenolsulfonphthalein (p_H 7.8) the administration of soda was suspended. This scheme was continued for four or five days.

4. It is important to keep the eyes covered until all visual and retinal changes have disappeared.

CONCLUSION

The essential principle in the treatment of these cases was the correction of acidosis.

Twenty-six patients recovered and were returned to duty. All but 4 had complete restoration of vision at the time of discharge from the hospital.

10. If sodium lactate solution is not immediately available, 5 per cent sodium bicarbonate freshly and properly prepared for intravenous use may be given in doses of 250 cc. This amount of alkali is equivalent to four ampules of the molar sodium r-lactate solution. The lactate solution is preferable, however, since it yields the sodium ion more slowly into the system and thereby lessens the possibility of an uncompensated alkalosis.

Extradural Hemorrhage.—A finding of value in the diagnosis and localization of an extradural hemorrhage is a dilated pupil which does not react to light or accommodation. This dilated fixed (Hutchinson's) pupil, with or without other signs of paralysis of the third nerve, is always on the same side as the clot and it is due to compression of the third nerve by the hippocampal gyrus, which has been herniated over the free edge of the tentorium. This herniation can readily be demonstrated at necropsy and has been experimentally produced by Cone and Reid. It must be remembered that mere inequality of pupils or a dilated pupil which reacts to light has no localizing value.—Merritt, H. Houston: Diagnostic Considerations in Patients with Head Injury, in Trauma of the Central Nervous System, Baltimore, Williams & Wilkins Company, 1945.

THE IN VITRO ACTION OF STREPTOMYCIN ON BACTERIA

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Streptomycin is effective against a variety of gram negative and gram positive bacteria both in vivo and in vitro.[1] However, its rational use in the treatment of disease must be preceded by an evaluation of dose intervals and sizes with a determination of bacterial susceptibility to its action. There are definite in vitro differences in the sensitivity of bacteria to streptomycin and within a given species strains may be found varying from extreme susceptibility to high resistance. As the blood concentration of streptomycin reaches a peak shortly after parenteral injection and then gradually falls to zero [2] it becomes necessary, for rational therapy, to determine whether a sufficiently high blood concentration is being maintained with reference to the sensitivity of the bacteria isolated from the patient. In many cases it may be found that a smaller dose or a longer interval between doses is sufficient to maintain a blood concentration which is more than ample to inhibit the in vitro growth of the invading bacterium. On the other hand, blood level and sensitivity determinations may indicate that a larger dose given at more frequent intervals is needed.

Our purpose in this communication is to report (1) the sensitivities of several species of bacteria to streptomycin, (2) to correlate these sensitivities with the serum concentrations of streptomycin that may be maintained in patients receiving the drug and (3) to determine whether the bacteria investigated developed a resistance to streptomycin in vivo.

SOURCES OF THE BACTERIA INVESTIGATED

The bacteria studied were isolated from 38 patients with various types of infections, among which were peritonitis, thoracic empyema, septicemia, infected wounds and burns, urinary tract infections and pelvic abscesses. Urine or pus from each case was cultured before and at intervals during streptomycin treatment and the organisms present were isolated in pure culture. Complete identification of all bacteria was not made, this being limited to Proteus vulgaris, Escherichia coli, Aerobacter aerogenes, Pseudomonas aeruginosa, alpha and beta hemolytic streptococci and the staphylococci. Other organisms were grouped according to their

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1. Feldman, W. H., and Hinshaw, H. C.: Effects of Streptomycin on Experimental Tuberculosis in Guinea Pigs: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **19:** 593-599, 1944. Heilman, F. R.: Streptomycin in the Treatment of Experimental Tularemia, ibid. **19:** 553-559, 1944; Streptomycin in the Treatment of Experimental Infections with Micro-Organisms of the Friedlander Group (Klebsiella), ibid. **20:** 33-39, 1945. Jones, Doris; Metzger, H. J.; Schatz, Albert, and Waksman, S. A.: Control of Gram-Negative Bacteria in Experimental Animals by Streptomycin, Science **100:** 103-105, 1944. Robinson, H. J.; Smith, Dorothy G., and Graessle, O. E.: Chemotherapeutic Properties of Streptomycin, Proc. Soc. Exper. Biol. & Med. **57:** 226-231, 1944. Schatz, Albert; Bugie, Elizabeth, and Waksman, S. A.: Streptomycin, a Substance Exhibiting Antibiotic Activity Against Gram-Positive and Gram-Negative Bacteria, ibid. **55:** 66-69, 1944. Schatz, Albert, and Waksman, S. A.: Effect of Streptomycin and Other Antibiotic Substances on Mycobacterium Tuberculosis and Related Organisms, ibid. **57:** 244-248, 1944. Waksman, S. A.; Bugie, Elizabeth, and Schatz, Albert: Isolation of Antibiotic Substances from Soil Micro-Organisms, with Special Reference to Streptothricin and Streptomycin, Proc. Staff Meet., Mayo Clin. **19:** 537-548, 1944.

2. Buggs, C. W.; Pilling, M. A.; Bronstein, Bernice, and Hirshfeld, J. W.: The Absorption, Distribution and Excretion of Streptomycin in Man, J. Clin. Investigation, to be published.

morphology, gram staining reaction and oxygen requirement. After the aerobes were obtained in pure culture they were screened for their sensitivity to streptomycin, following which their sensitivity over a narrower range was determined. The action of streptomycin on the anaerobes was not tested.

SCREENING FOR THE APPROXIMATE SENSITIVITY TO STREPTOMYCIN

An aqueous solution of streptomycin [3] having a concentration of 448 S [4] units was prepared from a weighed amount of the dry product. Twofold serial dilutions of this solution were made in nutrient broth, using 0.4 cc. of the streptomycin solution. The dilution was carried through thirteen tubes. An inoculum of 0.3 cc. of a 1:10,000 dilution of an eighteen to twenty-four hour culture of the test organism was now added to each tube, as well as to a control tube and a tube which contained 0.4 cc. of undiluted streptomycin solution. The final dilutions of the streptomycin gave concentrations ranging from 256 units to 0.03 unit. The tubes were incubated for eighteen to twenty-four hours and read on the basis of the presence or absence of turbidity.

If more than 2 units of streptomycin was required to inhibit growth, the bacterium was retested in a series of tubes containing gradually increasing concentrations of streptomycin in order to arrive at a closer approximation of the organism's sensitivity. This additional step was taken because of the 100 per cent error inherent in the twofold serial dilution method.

DETERMINATION OF SENSITIVITY VALUES WITHIN NARROWER RANGES THAN THOSE POSSIBLE WITH THE TWOFOLD SERIAL DILUTION METHOD

Various concentrations of streptomycin solutions were prepared in double the desired strength and added in 0.5 cc. amounts to 0.5 cc. of double strength nutrient broth which contained from 1,000 to 10,000 of the test bacteria per cubic centimeter. If the screen test of an organism showed its sensitivity to be 4 S units, it was retested with individual solutions of streptomycin containing from 1 to 8 units in steps of 1 unit of streptomycin per cubic centimeter. In like manner, organisms with screened sensitivities of 8, 16, 32 and 64 units were retested in various concentrations of streptomycin as given in table 1. Column 3 of this table gives the concentrations of streptomycin to which the organisms were exposed and the range of error which may occur in the end point. Organisms which were sensitive to 128 or 256 units in the screen test were not retested except in a few isolated instances.

RESULTS OF SENSITIVITY TESTS

The sensitivity to streptomycin of bacteria that were studied is given in table 2. These values may be compared with the serum concentrations of streptomycin in patients following the intramuscular or intravenous injection of streptomycin ranging from 25,000 to 1,000,000 S units which were reported by Buggs, Pilling, Bronstein and Hirshfeld,[2] who found that 500,000 S units of streptomycin administered intramuscularly or intravenously was sufficient to maintain a serum concentration which was at a level of 10 to 15 units at the end of four hours. Theoretically, then, all bacteria reported in this paper with a sensitivity of 8 units or less would be inhibited over a period of at least four hours by a parenteral injection of 500,000 S units of streptomycin.

Escherichia Coli.—Nineteen of 26 strains of Escherichia coli, 73 per cent, were found to be sensitive to a concentration of 8 units or less of streptomycin. Six of the strains were inhibited by concentrations of streptomycin between 12 and 32 units, while only one strain had a resistance greater than 256 units. The latter strain was isolated from the urine of a patient before streptomycin therapy was begun and may be assumed to have been naturally resistant. Four of the twenty-six strains were isolated from 1 patient and three strains from another, but in neither of these cases did the organism acquire an increased tolerance for streptomycin during therapy.

TABLE 1.—*Solutions Used for Sensitivity Tests and the End Points as Read from Individual Tubes*

Screened Sensitivity, S Units/Cc.	Solutions Used for Further Tests, S Units/Cc.	End Points as Read from Individual Tubes, S Units/Cc.	Error
4	2	1	0
	4	2	
	6	3	
	8	4	
	10	5	
	12	6	
	14	7	
	16	8	
8	8	4	−1 unit
	12	6	
	16	8	
	20	10	
	24	12	
	28	14	
	32	16	
16	16	8	−1 to −3 units
	24	12	
	32	16	
	40	20	
	48	24	
	56	28	
	64	32	
32	32	16	−1 to −7 units
	48	24	
	64	32	
	80	40	
	96	48	
	112	56	
	128	64	
64	64	32	−1 to −15 units
	96	48	
	128	64	
	160	80	
	192	96	
	224	112	
	256	128	

Proteus Vulgaris.—Six strains of Proteus vulgaris which were isolated from 2 patients were found to be sensitive to streptomycin, a concentration of 8 units or less being sufficient to inhibit the in vitro growth of all of them. Five of the strains were isolated during a twelve day period from an abdominal abscess of 1 of the 2 patients. Originally the organism was sensitive to 2 units of streptomycin, but after twelve days of therapy it required 8 units to inhibit its growth. In this instance Proteus vulgaris probably developed a tolerance for streptomycin. The increase in resistance, however, is not beyond the blood concentration of streptomycin that may be maintained over a period of at least four hours in a patient who has received 500,000 S units of the drug, either intramuscularly or intravenously.

Pseudomonas Aeruginosa.—The majority of the strains of Pseudomonas aeruginosa were very resistant to streptomycin, and in 2 instances it appeared that the organism developed an increased tolerance for the drug during therapy. In 1 case the resistance of the organism as recovered from bile before treatment was started was

3. The streptomycin was provided through Dr. D. F. Robertson of Merck and Company, Inc., Rahway, N. J.

4. An S unit of streptomycin, synonymous with an E. coli unit, is that amount of streptomycin which will inhibit the growth of a standard strain of E. coli in 1 cc. of nutrient broth or other suitable medium.

32 units of streptomycin. Three days later, when the organism was again isolated, its resistance had increased to more than 256 units. In the second case Pseudomonas aeruginosa was isolated from an infected ankle. It was sensitive to 20 units of streptomycin. Seven days later a reisolation of this organism was made. It now had a resistance greater than 256 units.

Of the nineteen strains of Pseudomonas aeruginosa reported in table 2, only five of them, 26 per cent, were sensitive to 8 units or less of streptomycin on primary isolation. The remaining fourteen strains required from 16 to more than 256 units for in vitro inhibition.

TABLE 2.—*Sensitivities of Bacteria to Streptomycin*

Determinations made in nutrient broth which contained 0.85 per cent sodium chloride

Organism and Sensitivity, S Units/Cc.	Number of Strains
E. coli from 21 Patients	
1	5
2	3
4	4
5	4
6	3
8	2
12	1
16	2
32	1
>256	1
	26
P. vulgaris from 2 Patients	
2	1
4	2
6	1
8	2
	6
Ps. aeruginosa from 13 Patients	
1	1
4	2
5	1
8	1
16	1
32	1
40	2
100	1
>256	9
	19
A. aerogenes from 15 Patients	
1	2
2	6
3	3
4	1
5	4
6	1
16	1
20	1
>256	1
	20
S. aureus from 14 Patients	
0.03	3
0.06	2
0.125	2
0.5	1
1	4
2	5
3	1
4	2
5	1
8	1
16	1
32	1
128	1
>256	2
	27
S. albus from 12 Patients	
0.03	1
0.06	7
0.125	6
0.25	5
1	2
128	1
>256	4
	26
Alpha hemolytic streptococci from 18 Patients	
0.06	1
0.5	1
1	2
2	2
4	5
5	3
6	5
8	7
16	3
32	2
>256	6
	37
Beta hemolytic streptococci from 10 Patients	
0.06	2
0.125	1
1	1
4	2
5	3
8	2
32	2
>256	2
	15
Diphtheroids from 19 Patients	
0.03	1
0.06	2
0.125	7
0.25	2
0.5	3
1	1
7	1
256	6
>256	12
	36

Aerobacter Aerogenes.—Seventeen of the twenty strains studied, 85 per cent, were sensitive to concentrations of streptomycin well within ranges that may be obtained in blood, only three of them requiring more than 6 units for the complete inhibition of growth. The one strain with a resistance greater than 256 units was the second isolation of this organism from the urine of a patient under treatment with streptomycin. When first isolated, nine days previously and two days after therapy was begun, the organism was inhibited by 1 unit of streptomycin. It would thus appear that this strain developed a decided resistance to streptomycin during its eleven days' exposure to the drug. The two strains with sensitivities of 16 and 20 units of streptomycin were primary isolations from 2 patients a few days after therapy was begun. They may have developed an increased tolerance for the drug during this period of therapy.

Staphylococci.—The vast majority of the staphylococci studied proved to be very sensitive to streptomycin, many of them being inhibited by less than 0.1 unit of the drug.

Twenty-seven strains of Staphylococcus aureus were tested. Twenty-two of these strains, or 81 per cent, were sensitive to 6 units or less of streptomycin when first isolated, and only one of the twenty-six strains presumably developed a tolerance for the drug during the course of treatment. One of the two strains requiring more than 256 units of streptomycin for inhibition was a primary isolation from a case of osteomyelitis after six days of therapy. The second of these two strains was isolated from an infected decubitus ulcer which was treated locally and parenterally with streptomycin. When first isolated this organism was sensitive to 6 units of streptomycin. On the second isolation, six days later, the sensitivity was 128 units. After three additional days of exposure to the drug the organism was able to tolerate 256 units of streptomycin.

Twenty-one of 26 strains of Staphylococcus albus, 81 per cent, were sensitive to 1 unit or less of streptomycin. In 1 instance a strain apparently developed a tolerance for the drug during thirteen days of therapy. When first isolated its sensitivity was 0.06 unit, but thirteen days later, and on two additional occasions, the resistance of the organism as isolated from the same patient was greater than 256 units. The fourth strain reported with a resistance greater than 256 units was a primary isolation following six days of therapy.

Thirteen additional strains of micrococci were tested for their sensitivity to streptomycin. These were identified as Staphylococcus epidermidis, Micrococcus candidus and Micrococcus aurantiacus. Eleven of the thirteen strains, or 85 per cent, were sensitive to 2 units or less of streptomycin.

Alpha Hemolytic Streptococci.—Thirty-seven isolations of alpha hemolytic streptococci were made from 18 patients during their course of treatment with streptomycin. Twenty-six of the strains, or 70 per cent, were sensitive to 8 units or less of streptomycin. The remaining eleven strains required 16 or more units for inhibition. In 2 instances it appeared that alpha hemolytic streptococci developed a tolerance for the drug. In a case of urinary tract infection this organism was isolated from urine on five different occasions during a period of nine days. The sensitivities were 1, 2, 4, 8 and 256 units of streptomycin. The second instance in which an alpha hemolytic streptococcus developed an increasing tolerance for streptomycin occurred with a strain isolated from a gunshot wound. Its sensitivity on primary isolation was 16 units, but twenty-seven days later when reisolated from the wound it grew very well in the presence of 256 units of streptomycin. The remaining four strains, resistant to 256 units of streptomycin, were primary isolations before therapy was begun.

Beta Hemolytic Streptococci.—Eleven of fifteen strains of beta hemolytic streptococci, or 73 per cent, were found to be sensitive to 8 units or less of streptomycin. Two strains with a sensitivity of 32 units were isolated from 1 patient before therapy was begun, and two strains that were resistant to more than 256 units were isolated from another patient twenty-one and twenty-eight days after therapy had been started. These strains may have become resistant during the course of therapy.

Diphtheroids.—The diphtheroids were found to be either extremely sensitive or very resistant to streptomycin. Thirty-six strains were isolated from 19 persons. Seventeen of these strains were sensitive to 1 unit or less of streptomycin, one required 7 units for inhibition, 6 required 256 units and 12 strains were not inhibited by 256 units of the drug. No attempt was made to identify these organisms as to species, but on two different occasions diphtheroids with a great tolerance for streptomycin were isolated from lesions which, on an earlier date, had yielded diphtheroids that were sensitive.

COMMENT

A study of the sensitivity of bacteria to antibiotics is complicated by the extreme difficulty encountered in determining with any degree of accuracy whether or not the same organism is being isolated when cultures are obtained over a period of days or weeks from a given patient. Thus, is a strain of Staphylococcus aureus isolated from a patient on one date the same organism as that isolated from the patient on a later date? At times a given organism will either disappear from an infectious process or will be present in such small numbers that it is not recovered when a culture of the infection is made. At some later date this same species will reappear. Is it the same organism that was originally present or has the patient become reinfected with another strain of the bacterium?

The problem assumes clinical importance under the following circumstances: A bacterium is isolated from a patient just before therapy with an antibiotic is begun. It is found to be very sensitive to the drug and, in view of this sensitivity, the dosage of the drug is reduced or is given at longer intervals. At a later date the same species of bacterium is reisolated and is found to be resistant to the antibiotic. May we assume that the resistant strain developed from the sensitive strain under the lower therapeutic dose or is it (1) a new invader with natural resistance or (2) a naturally resistant strain which was originally present in the lesion but for some reason was not isolated when the first culture was taken?

In the case of bacteremias it is probably safe to assume that tolerance for a given antibiotic has developed when a resistant strain is isolated subsequent to the isolation of a sensitive strain, but with open wounds this assumption may not be justified.

It often happens that two or even three colonies of Staphylococcus aureus are fished for identification and sensitivity tests from a streak plate made from an infectious process. On testing the sensitivity of these colonies, all but one of them may prove to be sensitive to the antibiotic. At a later date a second culture of the lesion is made but only one Staphylococcus aureus colony is picked. It is resistant to the drug. Is this the organism which was originally resistant or has one of the susceptible strains developed a tolerance for the drug during therapy?

There appears to be no practical solution to this problem. It seems wiser therefore to maintain as high a concentration of the antibiotic in the body fluids as is possible.

SUMMARY

Two hundred and twelve strains of bacteria, isolated from 38 patients with miscellaneous infections while under treatment with streptomycin, were tested for their susceptibility to this antibiotic. The sensitivities obtained were correlated with the blood concentrations of streptomycin known to be attained in patients under therapy.

1. The majority of the strains of Escherichia coli, Proteus vulgaris, Aerobacter aerogenes, staphylococci and streptococci were susceptible in vitro to the blood concentration of streptomycin that can be maintained in the average patient over a four hour period when given in 500,000 S unit doses. This blood concentration is known to be from 5 to 7.5 or 8 S units per cubic centimeter of blood.

2. The majority of the strains of Pseudomonas aeruginosa investigated were found to be very resistant to streptomycin.

3. Resistant strains of a given bacterium were isolated from patients subsequent to the isolation of sensitive strains. It was assumed that these resistant strains developed from the sensitive strains.

4. Diphtheroids were found to be either extremely susceptible or very resistant to streptomycin.

5. A method was adopted for determining the sensitivity of bacteria to antibiotics within narrower limits than those obtainable with the twofold serial dilution method.

PENICILLIN IN TETANUS

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Tetanus, or lockjaw, is one of the most dreaded infectious complications of wounds. Although its specific etiology has been known for sixty years and its diagnosis has been relatively easy, the treatment of tetanus, once established, is still unsatisfactory and the results are uncertain. It has been disappointing to see the failure of large doses of antitetanic serum to alter the course or lower the mortality of this disease once it has developed, particularly since a small dose of the antitetanic serum has been so effective in preventing the development of the disease when given prophylactically at the time of injury. This has been particularly true in the cases with incubation periods of less than six days. The studies of Abel and Firor [1] have revolutionized the concept of the pathogenesis of tetanus and crystallized the facts known regarding the value and limitations of active therapy of established tetanus. Firor has pointed out that the outlook in generalized tetanus is always grave and that the mortality rate is frequently determined before the patient is seen by the physician. In one group no form of therapy known at the present time will prevent a fatal outcome, while in another group, composed particularly of cases seen during the prodromal period, the issue of life or death is

From the Department of Surgery, University of Cincinnati College of Medicine, and the Cincinnati General Hospital. The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the University of Cincinnati.

1. Abel, J. J.: On Poisons and Disease and Some Experiments with the Toxin of the Bacillus Tetani, Science **79:** 121-129, 1934. Abel, J. J.; Evans, E. A., Jr.; Hampil, B., and Lee, F. C.: Researches on Tetanus: II. The Toxin of the Bacillus Tetani Is Not Transported to the Central Nervous System by Any Component of the Peripheral Nerve Trunks, Bull. Johns Hopkins Hosp. **56:** 84-114, 1935. Abel, J. J.; Hampil, B., and Jonas, A. F., Jr.: Researches on Tetanus: III. Further Experiments to Prove that Tetanus Toxin Is Not Carried in Peripheral Nerves to the Central Nervous System, ibid. **56:** 317-336, 1935. Firor, W. M., and Jonas, A. F., Jr.: Researches on Tetanus: VI. Production of Reflex Motor Tetanus by Intraspinal Injection of Tetanus Toxin, ibid. **62:** 91-109, 1938. Abel, J. J.; Firor, W. M., and Chalian, W.: Researches on Tetanus: IX. Further Evidence to Show that Tetanus Toxin Is Not Carried to Central Neurons by Way of the Axis Cylinders of Motor Nerves, ibid. **63:** 373-403, 1938. Abel, J. J.; Evans, E. A., Jr., and Hampil, B.: Researches on Tetanus: V. Distribution and Fate of Tetanus Toxin in the Body, ibid. **59:** 307-391, 1936. Firor, W. M.; Lamont, A., and Shumacker, H. B., Jr.: Studies on the Cause of Death in Tetanus, Ann. Surg. **111:** 246-274, 1940. Firor, W. M.: The Prevention and Treatment of Tetanus, Am. J. Surg. **46:** 450-453, 1939. Shumacker, H. B.; Firor, W. M., and Lamont, Austin: The Therapeutic Use of Antitoxin in Experimental Tetanus, Surgery **8:** 1-18, 1940.

determined to a large extent by the physician's ability to diagnose promptly and to treat adequately.

With these thoughts in mind, it was decided to explore the potential value of penicillin in the management of established tetanus.

TABLE 1.—*Wound, Incubation Period and Outcome*

Case	Age	Date	Primary Wound	Incubation Period	Results
1	6	6/28/43	Unknown	Unknown	Recovery
2	9	8/30/43	Puncture wound of right great toe	9 days	Death
3	32	4/13/44	Gunshot wound of thigh	4 days	Death
4	7	6/13/44	Puncture wound dorsum of left foot	11 days	Recovery
5	10	7/28/44	Laceration of knee	10-15 days	Recovery
6	8	8/27/44	Infected laceration of thigh	10-11 days	Death
7	2	10/16/44	Operative wound on hand; postoperative skin graft	12 days	Death
8	20	10/18/44	Ulceration of foot	10 days	Death
9	9	1/ 3/45	Scratch on toe	7-10 days	Recovery
10	25	1/ 6/45	Abrasion of leg	7 days	Recovery
11	8	1/26/45	Abrasions of chin and neck	12 days	Recovery
12	4	2/ 3/45	Unknown	Unknown	Death
13	5	2/22/45	Puncture wound of left heel	Unknown	Death
14	8	3/30/45	Puncture wound of right palm	5 days	Death
15	20	5/21/45	Laceration of scalp	3-5 days	Death
16	15	6/16/45	Superficial laceration of leg	7 days	Death

MATERIAL

During the past twenty-three months we have seen and studied 16 cases of established generalized tetanus, and 14 of these were treated during a period of twelve months (table 1). Eleven patients were 10 years of age or less and the oldest patient was 32. Eleven were males and 5 were females. The primary wound was unusually small (table 1) and often so insignificant that it was overlooked until the time of admission to the hospital. In 2 instances the primary wound was unknown and was never demonstrated by clinical examinations. Five of the wounds were simple puncture wounds, 4 were infected lacerations, 3 were abrasions or deep scratches, 1 was a plastic operative wound, and the other was a recurrent ulcer of the foot. Ten of the wounds were on the lower extremity, 2 were on the face or scalp and 2 were on the hand. The incubation period of the disease was unknown in 3 cases, five or less days in 3 cases, six to ten days in 6 cases and eleven to fifteen days in the remaining 4.

TABLE 2.—*Treatment and Result*

Case	Wound Excised	Antitoxin	Penicillin	Days in Hospital	Results	Penicillin—Beneficial Results
1	No	150,000	None	17	Recovery	
2	Yes	390,000	None	9	Death	
3	Yes	340,000	280,000	60 hrs	Death	No obvious beneficial results
4	Yes	100,000	1,500,000	21	Recovery	Questionable
5	Yes	75,000	None	27	Recovery	
6	Yes	65,000	65,000	16 hrs.	Death	Did not live long enough
7	No	20,000	60,000	24 hrs.	Death	No definite beneficial results; did not live long enough
8	No	200,000	350,000	48 hrs.	Death	None apparent
9	No	50,000	900,000	17	Recovery	Mild case; no obvious benefit
10	Yes	130,000	1,445,000	25	Recovery	No beneficial effects apparent
11	No	250,000	1,255,000	23	Recovery	Definite benefit: control of pneumonia and lowering of temperature
12	No	60,000	225,000	60 hrs.	Death	None
13	No	20,000	145,000	30 hrs.	Death	None apparent
14	Yes	160,000	695,000	4	Death	None apparent
15	Yes	260,000	500,000	4	Death	None apparent
16	Yes	140,000	760,000	5	Death	None apparent

METHODS

All of the patients received antitetanic serum intravenously or intramuscularly as soon after diagnosis as possible (table 2). The amount of antitoxin administered varied betwen 20,000 and 390,000 units. Fourteen of the patients received 50,000 or more units, 10 received 100,000 units or more and 5 received 250,000 or more units. In 9 instances the primary wound was excised one hour after infiltration of 10,000 to 20,000 units of antitetanic serum into the surrounding area. The resultant wound was left open and treated topically by the daily application of zinc peroxide-calcium peroxide ointment.[2] Penicillin was administered to 13 of the patients, and the remaining 3, not receiving it, were used for contrast. The usual dose was 15,000 units every three hours. In 8 cases a total of 500,000 or more units of penicillin was given, and 3 patients received a total of 1,000,000 to 1,500,000 units. All of the patients would have received a million or more units of penicillin if they had lived long enough.

RESULTS

There were 10 deaths and 6 recoveries, giving a mortality rate of 62.5 per cent. Nine of the 13 patients treated with penicillin died. An analysis of these deaths is interesting. All of the patients with incubation periods known to be five days or less died, 4 of 6 patients with incubation periods of six to ten days died, only 1 of 4 with incubation periods of eleven to fifteen days died. Two of the 3 with unknown incubation periods died. The clinical courses of these 2 patients with death occurring thirty and sixty hours after admission to the hospital strongly suggested that their incubation periods were also less than five or six days. These observations reemphasize the relationship of high mortality rate and short incubation period.

TABLE 3.—*Causes of Death*

Case	Cause of Death
2	Gas gangrene on eighth day; died two hours after amputation
3	Respiratory arrest during convulsion
6	Died sixteen hours after admission in convulsion with respiratory arrest
7	Toxemia; pyrexia
8	Respiratory arrest
12	Toxemia; respiratory arrest
13	Toxemia; respiratory arrest; pyrexia
14	Respiratory arrest; toxemia; pulmonary edema
15	Respiratory arrest
16	Respiratory arrest; toxemia

The amount of antitoxin given did not seem to affect the rate of survival. Four of the 5 patients receiving 250,000 or more units of tetanus antitoxin died, 5 of the 10 patients receiving 150,000 units or less died and 4 of the 6 receiving 75,000 units or less died. No immediate reactions to the serum occurred, but typical serum sickness developed in case 10.

Experience has shown that clinical improvement in most established infections usually occurs within eighteen to seventy-two hours after the onset of treatment with penicillin. In contrasting the cases in which penicillin was administered with those in which it was not, no obvious beneficial effects such as a fall in the temperature and pulse rates, or definite decrease in the incidence, duration or severity of convulsive seizures were noted in the course of the disease that could be attributed to the administration of penicillin, except in case 11. This child had developed a complicating pneu-

2. Reid M. R., and Altemeier, W. A.: Peroxide Ointments, Ann. Surg. **118**: 741-750, 1943. Altemeier, W. A.: Postoperative Infections, S. Clin. North America, to be published.

monia during the prolonged anesthesia produced by solution of tribromoethanol, and the administration of penicillin was followed within thirty-six hours by definite clinical improvement with a fall in the temperature and pulse rates, although the signs of tetanus continued to run their course. It is interesting to note that 6 of the 9 deaths of patients receiving penicillin occurred within sixty hours or less after admission to the hospital and the start of therapy. Respiratory arrest was the immediate cause of death in 8 of these 9 cases (table 3). Associated conditions at death were pulmonary edema, hyperpyrexia and evidence of profound toxemia. None of the patients with incubation periods of five days or less survived.

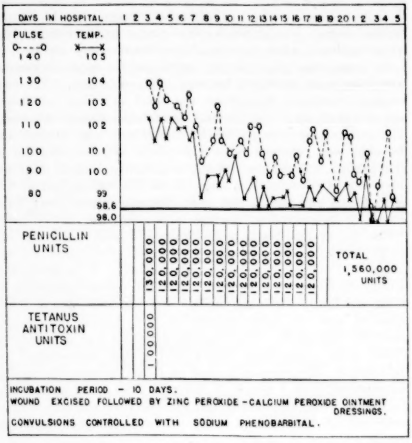

Chart 1.—Clinical course of patient 4, treated with antitoxin and penicillin.

The results of treatment which are of especial interest are illustrated in the following 5 representative cases:

CASE 4.—L. H., a white boy aged 7 years, admitted to the hospital on July 13, 1944, had received a small puncture wound on the dorsum of his left foot ten days before admission while running through a field of wheat stubbles. A local infection developed, which the mother treated with poultices of onions each night. The appearance of the local lesion improved, but three days before admission he began to complain of pain in the back. The day before admission, while playing, he fell twice and seemed to be very awkward. On the day of admission he complained of increasing pain in the back, inability to open the jaw, and stiffness of the neck and back.

On examination the boy appeared well developed, well nourished and dirty, and he was extremely alert and apprehensive. It was impossible to open his mouth more than 1 cm. A small infected puncture wound about the size of a quarter (24 mm.) was present on the dorsum of the left foot just proximal to the third and fourth toes. The musculature of the abdomen, back and extremities was rigid and in tonic spasm. All reflexes were hyperactive, and there was sustained clonus of the left ankle.

He received 90,000 units of tetanus antitoxin by the intramuscular and intravenous routes, and an additional dose of 10,000 units was injected about the wound. One hour later the wound was excised and a splinter of wood was found in its center. Culture of the wound showed Clostridium tetani. The resultant area was packed open with gauze saturated in zinc peroxide-calcium peroxide ointment. Penicillin therapy was also used, 15,000 units every three hours for a total dose of 1,560,000 units. Under this treatment his condition at first became worse. The neck rigidity, trismus and back rigidity increased and clonic spasms developed. These were controlled fairly well by frequent injections of phenobarbital sodium. After three days, however, these signs gradually decreased, and he began to recover (chart 1). The wound assumed a healthy appearance and healed by secondary intention. When the patient was dismissed from the hospital twenty days later, the skeletal muscles of the extremities, back and abdomen were still moderately spastic, although he was able to open his mouth widely. Subsequently his family physician reported that he had made a complete recovery.

This was a moderately severe case of tetanus with an incubation period of ten days resulting from an infected puncture wound of the dorsum of the left foot. Although the patient recovered, it was impossible to attribute any beneficial results to penicillin.

Another case of tetanus with an incubation period of eleven days, treated with tetanus antitoxin but without penicillin, was used for contrast with the preceding one:

CASE 5.—R. N., a white boy aged 10 years, was admitted to the Cincinnati General Hospital with a history of having fallen three weeks before on a piece of broken glass, cutting his knee. The wound bled freely and was washed with warm water and covered with a clean cloth. About four hours later the family physician washed it with a disinfectant and approximated the wound edges with adhesive tape. The child bumped the knee severely enough to open it again three times during the next few weeks. A little more than a week before admission the patient developed stiffness of the thigh, neck and back muscles and rigidity of the jaws. Two days before admission he developed clonic convulsions with no loss of consciousness.

The patient was well developed and well nourished. There were risus sardonicus and rigidity of the jaws. A laceration on the right knee showed induration of the surrounding tissues but no lymphadenitis nor lymphangitis. The deep reflexes of the lower extremities were somewhat hyperactive, and ankle clonus was sustained bilaterally.

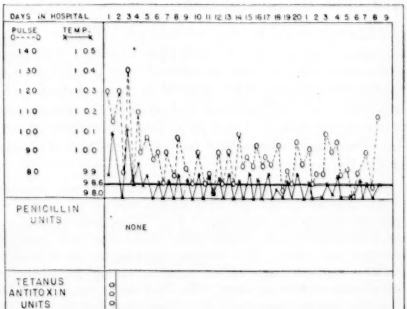

Chart 2.—Clinical course of patient 5, treated with tetanus antitoxin and without penicillin.

The patient was given 60,000 units of antitoxin intramuscularly on admission, and about three hours later the wound of the knee was excised with a wide margin after the infiltration of 15,000 units of antitoxin. The procedure was done under local anesthesia, and several convulsive seizures involving the back and lower extremities occurred in the operating room. In an effort to relax him quickly, 5 cc. of paraldehyde was given

intramuscularly, but the stimulation of the pain caused by this sent him into a series of generalized tetanic spasms. He was kept mildly sedated with paraldehyde and phenobarbital. For three days the patient's condition did not improve but seemed to get worse. Beginning with the fourth day after admission, definite signs of improvement became obvious with a fall in temperature

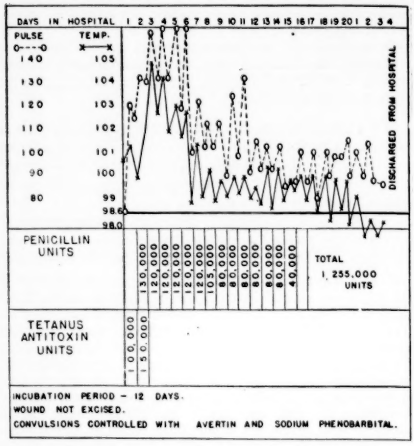

Chart 3.—Definite improvement in clinical course of patient 11 attributable to effect of penicillin on pneumonia complicating the tetanus.

and a decrease in the number and severity of convulsive seizures (chart 2). The local wound was treated with zinc peroxide-calcium peroxide ointment applied every forty-eight hours. On the twenty-first day it was grafted with skin successfully. The patient was discharged on the thirty-first hospital day much improved but still somewhat spastic.

Although case 5 treated without penicillin was probably somewhat less severe than case 4 treated with penicillin, it is obvious that in neither was a fatal dose of tetanus toxin fixed in the central nervous system. The response of the temperature and pulse to therapy was no better in the case in which penicillin was employed, and the other signs of tetanus subsided at about the same rate in the 2 patients.

Case 11.—M. R., a white girl aged 8 years, was admitted to the hospital on Jan. 20, 1945 with a history of inability to open her mouth for two days. Two weeks before admission she had struck a tree stump while sled riding and scratched her chin and neck. The wounds appeared to be superficial scratches and apparently healed normally without medication or consultation with a physician. She had never received passive or active tetanus immunization. Three days before admission the child became irritable and forty-eight hours later she developed inability to open her mouth, headaches and restlessnesss. Four hours before her entrance into the hospital she had several generalized convulsions associated with pain and stiffness of the back.

Examination showed obvious risus sardonicus and opisthotonos. Her temperature was 100.6 F. and pulse rate 110. The teeth were tightly clenched, and any attempt to open the mouth passively or actively produced pain. There were several superficial healed scratches on the face that showed no evidence of infection. The abdominal muscles were in tonic spasm and the abdominal reflexes were hyperactive. There was resistance to passive movement of the extremities, and all deep reflexes were hyperactive.

The patient was given 100,000 units of tetanus antitoxin intravenously soon after her admission and 150,000 units during the second twenty-four hour period. Phenobarbital sodium failed to control the patient's convulsive seizures, which occurred every five to fifteen minutes, and it became necessary to administer solution of tribromoethanol. Occasionally convulsive seizures became severe and caused the patient to groan, even though she was anesthetized with the tribromoethanol. Phenobarbital sodium was administered as necessary in addition to the tribromoethanol when the convulsions became very severe.

An airway was placed in the mouth and the excessive mucous secretions were aspirated by suction as necessary. The convulsions continued throughout the third day after admission, and physical signs of bilateral bronchopneumonia developed. The temperature rose to 105 F., the face became flushed, and the skin was pale and hot. Convulsive seizures occurred at intervals of ten minutes and the respirations became deep and labored at 4 p. m. on this day. Penicillin was started at this time, 10,000 and then 15,000 units intramuscularly every three hours. Tribromoethanol therapy was continued.

The temperature began to fall thirty-six hours later, reaching 99 F. on the fourth day after the onset of penicillin therapy (chart 3). Thereafter the child continued to improve and several days later was able to open her mouth sufficiently to drink and enjoy water and milk. The convulsive seizures disappeared and the tonic spasms of the skeletal musculature gradually decreased. The dose of penicillin was decreased to 10,000 units every three hours and it was discontinued on February 3. She received a total of 1,255,000 units of penicillin administered over a period of fourteen days. The patient was discharged from the hospital on February 10 and was able to walk out of the hospital, although she was still somewhat spastic.

In this case recovery was unquestionably due to the combined use of antitoxin, penicillin and adequate sedation. Although definite clinical improvement followed the start of penicillin therapy, we believe this improvement resulted largely if not entirely from the control of the bronchopneumonia which had developed, and not from any effect on the tetanus directly.

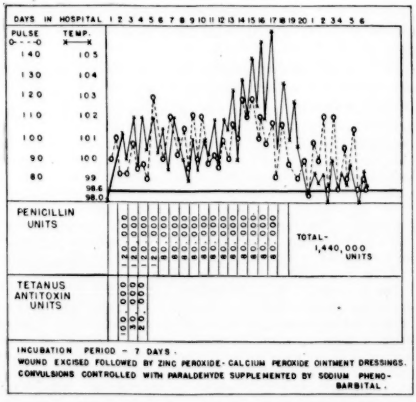
DAYS IN HOSPITAL 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 1 2 3 4 5 6
PULSE
TEMP.
PENICILLIN UNITS
TOTAL-
1,440,000 UNITS
TETANUS ANTITOXIN UNITS
100,000
150,000
INCUBATION PERIOD – 7 DAYS.
WOUND EXCISED FOLLOWED BY ZINC PEROXIDE-CALCIUM PEROXIDE OINTMENT DRESSINGS.
CONVULSIONS CONTROLLED WITH PARALDEHYDE SUPPLEMENTED BY SODIUM PHENOBARBITAL.

Chart 4.—Clinical course of case 10, treated with penicillin and tetanus antitoxin. Serum sickness on eleventh day as result of serotherapy. No apparent benefit from penicillin.

Case 10.—R. K., a white man aged 25, was admitted to the hospital on Jan. 6, 1945 with a history of having received superficial lacerations of both legs on the front step of a farm house about Dec. 27, 1944. On January 3 stiffness of the jaw occurred, and this increased daily. On the 6th anorexia, inability

to open the mouth, stiffness of the neck, dysphasia and vague anterior chest pains developed.

On physical examination his temperature was 98.4 F., pulse rate 90 and respiratory rate 30. He appeared clear mentally, and his position was one of typical opisthotonos. Risus sardonicus and trismus were present, and any effort to open the mouth resulted in pain. The pupils reacted poorly to light, the right reacting better than the left. The abdominal muscles were spastic. There was moderate resistance to passive movement of the upper extremities, and the muscles of the lower extremities were held in tonic spasm. All reflexes were hyperactive, and there was sustained left patellar and ankle clonus.

The patient received 40,000 units of tetanus antitoxin intravenously and 40,000 units intramuscularly soon after admission. An additional 20,000 units of tetanus antitoxin was injected about the lesions. One hour later the wounds were excised and packed open with dressings of zinc peroxide-calcium peroxide ointment, which were changed daily thereafter. In the following four days he received 70,000 units of tetanus antitoxin. In addition, immediately after admission, he received 120,000 units of penicillin daily given intramuscularly in doses of 15,000 units every three hours for four days and 10,000 units for another ten days. The total amount of penicillin administered was 1,445,000 units. Effective sedation was obtained with paraldehyde supplemented by phenobarbital sodium. His condition remained more or less stationary for four days, and then the muscle spasticity and convulsive seizures lessened. The temperature and pulse rates remained elevated, however (chart 4).. On the eleventh day after admission he developed signs of serum sickness, which became accentuated and gradually subsided during the following nine days. Thereafter his improvement was uninterrupted.

CASE 16.—W. B., a white youth aged 16, was admitted to the hospital on June 10, 1945 with a history of having scratched his leg one week before on a bicycle pedal. He received no local treatment nor prophylactic injection of tetanus antitoxin. On the day before admission he began to have difficulty in swallowing and opening his mouth. This increased rapidly and was accompanied by stiffness and pain in his neck. There was no history of convulsions up until the time of admission.

Physical examination showed that the patient was well developed and well nourished. His temperature was 100.1 F., pulse rate 110 and respiratory rate 22. Spasm of the masseter muscles, rigidity of the jaws, risus sardonicus, rigidity of the neck, back and abdomen, and hyperactive reflexes were present. A small superficial abrasion without cellulitis or tenderness was present on the lateral aspect of the right leg. The white blood cell count was 7,000, the red blood cell count 4,900,000 and the hemoglobin 12.75 Gm. Urinalysis was essentially negative. A diagnosis of tetanus was made and immediate treatment was started.

After a negative skin test, a dose of 20,000 units of tetanus antitoxin was injected about the wound. An additional 40,000 units of tetanus antitoxin was given intramuscularly and another 40,000 units given intravenously. Phenobarbital sodium 3 grains (0.2 Gm.) was given hypodermically. One hour later the wound on the right leg was excised under local anesthesia after preliminary cleansing with soap and water. The subcutaneous tissues were found to be discolored and hemorrhagic down to the underlying fascia. The wound was excised and the wound was packed open with gauze impregnated with zinc peroxide-calcium peroxide ointment. Penicillin in doses of 20,000 units was given immediately after admission and every three hours thereafter.

At 2 a. m. June 11 the patient began to have sharp shooting pains in his back every ten minutes. Codeine in 1 grain (0.06 Gm.) doses gave temporary relief. The patient became quite restless and had more extensive and more frequent pains associated with convulsions. The duration of the pains increased and the intervals between attacks decreased until they were almost continuous. He was given 8 cc. of paraldehyde in 2 ounces (60 cc.) of olive oil by rectum and this relaxed him sufficiently to permit sleep. This was repeated every three hours during the following day. At 2 o'clock in the morning of the 12th the patient began to have frequent convulsions, and the dose of paraldehyde by rectum was increased to 12 cc. every three hours. This quieted him considerably, although he continued to have occasional convulsions. Parenteral fluids for general support were given by continuous intravenous injection.

At 6 a. m. on the 12th the patient began to have very severe convulsions which resulted in complete respiratory arrest for several minutes. Artificial respiration was given successfully, and the administration of paraldehyde was continued. Pentothal sodium 5 cc. was started intravenously with the next severe convulsion. It was very effective temporarily and relaxed the tonic spasm of the skeletal muscles considerably. However, severe convulsions again occurred and were followed by periods of complete respiratory arrest. During the attacks of respiratory arrest the patient became pale, then mottled, and finally extremely dark and cyanotic. After the administration of artificial respiration and the injection of pentothal sodium intravenously, regular respirations were resumed. Intocostrin in doses of 3 cc. was given every two hours and nasal oxygen therapy was started.

On June 13 the patient developed acute pulmonary edema, which was controlled by the usual methods. He continued to have attacks of respiratory arrest, and these were overcome with more and more difficulty on this day. In all, he had nine attacks of complete arrest of respiration. Intocostrin was discontinued on the 13th and during the day of the 14th the patient's general condition seemed much improved. He had no convulsions for twenty-four hours and was resting comfortably. The neck and back were still in the position of opisthotonos. In the evening of the 14th the patient commenced to have extremely painful convulsions, which continued throughout the early morning hours of the 15th. He remained perfectly rational in spite of the doses of paraldehyde and pentothal sodium.

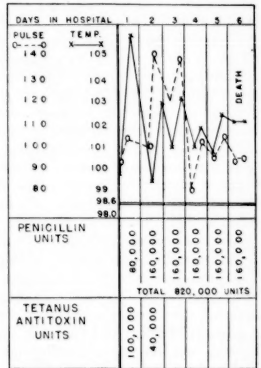

Chart 5.—Course of patient 16, treated with penicillin and tetanus antitoxin.

At 6:45 a. m. on the morning of the 16th he developed a severe convulsion and ceased breathing during it. At 6:55 his pulse became imperceptible, and artificial respiration, cardiac massage and an injection of intracardiac epinephrine failed to revive him.

COMMENT

Reports [3] of cases of tetanus in which recovery occurred after treatment with both antitetanic serum and penicillin have led to an impression that penicillin is a life saving measure in this disease. Our studies have not substantiated this impression.

Tetanus is essentially an infectious disease developing after a variable incubation period and caused by a potent water soluble toxin produced in a wound infected by Clostridium tetani. The responsible wound in civilian practice is usually small and often insignificant (table 1). The chief reason for this is probably that patients with large wounds almost routinely receive one or more prophylactic injections of tetanus antitoxin,

3. Buxton, R., and Kurman, R. L.: Tetanus: A Report of 2 Cases Treated with Penicillin, J. A. M. A. **127**: 26 (Jan. 6) 1945.

whereas those with small wounds do not, usually because of their failure to go to their physician for one treatment. In tetanus it is not the presence of local tissue destruction or signs of invasiveness usually associated with other infections of wounds which present any difficulty in management. Instead it is the production, distribution and fixation in susceptible tissues of extremely small quantities of the specific and powerful toxin. I have seen fatal and typical cases of tetanus originating from primary wounds containing but one drop of pus. In other instances the wound was so insignificant that it completely escaped notice. After a fatal dose of the toxin has become fixed in the central nervous system, death apparently is inevitable under the present methods of treatment. The failure of antitetanic serum, even in extremely large doses, is well known in established clinical and experimentally produced tetanus when a fatal dose of toxin has been fixed in the central nervous system. This is in sharp contrast to its effectiveness in the prevention of tetanus when a prophylactic dose of 1,500 units is administered at the time of injury.

Although penicillin exerts a definite bacteriostatic effect on Cl. tetani, it has no known effect on its toxin. Preliminary experiments here in mice have failed to show any inhibition of the action of tetanus toxin by penicillin. Therefore it is no surprise that our studies have failed to demonstrate any beneficial effect of penicillin on the course of established clinical tetanus.

When complications such as pneumonia or secondary invasive wound infections occur during the course of tetanus, the administration of penicillin is of definite value in their control, as illustrated in case 11.

The failure of penicillin to alter appreciably the course of established tetanus reemphasizes several very important concepts: (1) that the length of the incubation period is the most important single prognostic sign, (2) that the essential primary cause of the disease is a bacterial toxin and (3) that successful management depends not on chemotherapy but on early diagnosis during the prodromal period, immediate neutralization by specific serotherapy of all existing free toxin in the body, removal of the source of toxin, control of the convulsive seizures, control of the attacks of respiratory arrest and the administration of general supportive measures.

SUMMARY

A clinical study of 16 cases of established generalized tetanus has failed to show evidence of any beneficial effect of penicillin on the course of this disease. There was no obvious fall in the temperature or pulse rates as has been repeatedly seen in other infections susceptible to its action, no decrease in mortality or morbidity nor any definite decrease in the severity, duration and frequency of the convulsive seizures which could be attributed to the action of penicillin. Exceptions may be found in cases of tetanus complicated by pneumonia or other infections susceptible to penicillin. In such instances, however, the improvement that occurs is due to the effect of the chemotherapeutic agent on the complicating infection and not on tetanus.

The evidence indicates that until some direct attack is possible on the fixed toxin or the products of its fixation in the central nervous system, the successful management of tetanus depends not on chemotherapy but on early diagnosis, adequate serotherapy for neutralization of free toxin, control of the convulsions and the administration of general supportive measures.

OCCURRENCE OF BRUCELLA MELITENSIS IN IOWA

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Brucella melitensis, the species of Brucella with usual source in goat and sheep, is now known to occur endemically in Iowa. Brucella abortus and Brucella suis, etiologic agents for brucellosis in cattle and hogs respectively, have been recognized and observed in Iowa since 1927. On the other hand, brucellosis of man caused by Brucella melitensis was for years considered an exotic type of disease in this area. The present report, based on laboratory findings and epidemiologic investigations, presents data referable to 20 cases of brucellosis diagnosed in Iowa during the past two years and found to be caused by the caprine strain of brucella, Br. melitensis.

ISOLATION OF BRUCELLA IN IOWA

During the period July 1, 1927 to June 21, 1945 brucella strains totaling 339 were recovered from human sources in the State Hygienic Laboratory by or under the direct supervision of one of us (I. H. B.). Of these strains 228 (67.3 per cent) were Br. suis, 83 (24.5 per cent) Br. abortus and 26 (7.7 per cent) Br. melitensis. Two (0.5 per cent) remain untyped because of dissociation.

BRUCELLA MELITENSIS STRAINS IN IOWA

Of the twenty-six strains of Brucella melitensis thus far isolated, all but one have come to light since December 1943. The solitary strain of Br. melitensis isolated in Iowa during June 1930 was recovered from the blood of a Mexican, a railroad employee then hospitalized in this state, who apparently acquired infection in Mexico previous to arrival in this country.[1]

Br. melitensis was isolated from the blood of 2 packing house workers in Iowa during December 1943. These mark the first 2 instances of brucellosis acquired in this state in which the melitensis species of Brucella was discovered to be the causative organism. In 1944 additional melitensis strains numbering fourteen were cultured from the blood of farmers and packing house employees. From Jan. 1 to June 21, 1945 isolations of this type numbered nine, making a total of twenty-six at the time of this report.

BLOOD CULTURE AND BLOOD CLOT CULTURE

In the series of twenty-six melitensis cultures here reported, eleven brucella strains were isolated from blood cultures (tryptose broth medium, p_H 6.8) as secured and forwarded to the State Hygienic Laboratory by attending physicians. The remaining fifteen strains were isolated from the blood clots of specimens submitted by attending physicians for agglutination tests. At present only the clots of specimens showing brucella agglutinins in the serum are cultured for the specific organism.

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Dr. Borts is director, State Hygienic Laboratory, Iowa State Department of Health, and assistant professor of hygiene and preventive medicine, State University of Iowa College of Medicine.

1. Jordan, Carl F., and Borts, I. H.: Double Infection by Organisms of the Brucella Group, Pub. Health Rep. **46**: 2437-2443 (Oct. 9) 1931.

When obtained, growth is identified on the basis of its gram stain, agglutinability with known antibrucella serum, hydrogen sulfide production and the bacteriostatic action of dyes as recommended by Huddleson.[2]

BLOOD CULTURES

Significance and Procedure.—The blood culture is of first importance among methods of confirming clinical diagnosis. Moreover, the isolation of Brucella with subsequent species identification is the only means of tracing infection to the proper source in domestic animals. Next in importance to the blood culture as a laboratory aid to the physician is the agglutination test. The skin test and opsonocytophagic test are indicative of exposure to infection in the recent or remote past but must be interpreted with great caution.

Organisms of the Brucella group grow best in tryptose broth.[2] The blood culture bottle containing 100 cc. of broth is inoculated with 3 to 5 cc. of blood. The blood should be taken during the afternoon or at the height of fever; strict asepsis must be observed, preferably with use of autoclaved needles and syringes. The blood culture should be incubated for several days, when possible, before forwarding to the diagnostic laboratory. Following arrival at the laboratory, blood cultures are subcultured biweekly to solid, tryptose agar medium, with prolonged incubation in an atmosphere containing 10 per cent carbon dioxide. This procedure is carried out for twenty-one days before a blood culture is discarded as negative.

Procedure with Blood Clot Culture.—In the absence of a blood culture, the bacteriologist in the quest for Brucella turns attention to the blood clot of the specimen submitted for the agglutination test. This procedure is often unsatisfactory in that spore forming and other bacteria are commonly present in the specimen on arrival at the laboratory. Such contaminations are the result of failure to use autoclaved syringes and needles or proper care in transferring the specimen from the syringe to the sterile test tube.

Beginning in July 1944, effort was made to find a suitable culture medium which would dissolve the blood clot and provide necessary nutriment for Brucella cultivation. The mediums devised by Sellers and Morris [3] and by Bohls and Schuhardt [4] were subjected to further modification. The elimination of glycerin and the substitution of as little as 0.2 per cent of tryptose for peptone in these formulas were found to enhance the growth of Brucella, with no additional benefit gained in concentrations beyond 2 per cent. The addition of para-aminobenzoic acid resulted in maintenance of growth for many months.

Blood clots of specimens are handled in the following manner: After centrifugation, the serum is drawn off with a capillary pipet under rigid asepsis. The clot is poured carefully into a tube of tryptose-bile medium. Clot cultures are incubated under 10 per cent carbon dioxide and are subcultured to tryptose slants weekly for three weeks before being discarded as negative.

LABORATORY DATA

Information regarding agglutination reactions and blood and clot culture isolations in the series of 20 melitensis cases thus far studied is contained in table 1.

2. Huddleson, I. Forrest: Brucellosis in Man and Animals, revised edition, Commonwealth Fund, 1943, p. 25.
3. Sellers, T. F., and Morris, J. F.: The Comminution of Blood Clots for Cultures, Am. J. Pub. Health **20**: 195-196 (Feb.) 1930.
4. Bohls, S. W., and Schuhardt, V. T.: Combined Agglutination Tests and Blood Clot Cultures in the Diagnosis of Typhoid Fever, Texas State J. Med. **31**: 210-212 (July) 1935.

CLINICAL MANIFESTATIONS

Illness due to Br. melitensis infection was characterized by fever, chills or chilliness, sweating, weakness, loss of weight, headache, muscular pains and leg pains. Although the course was mild in several cases, infection was generally more severe than that caused by Br. abortus and comparable with illness due to Br. suis. Rash, nosebleed, glandular swellings and nasal ulceration were noted in several of these cases. The rash, macular in character, resembles that seen in streptococcic septicemia; glandular swellings may simulate those of Hodgkin's disease.

EPIDEMIOLOGIC DATA

It is desired to emphasize the primary importance of the laboratory findings in this series of cases. Epidemiologic investigations were prompted by and dependent on isolation and identification of Br. melitensis in the laboratory.

Detailed information with reference to 20 of the 26 patients from whose blood Br. melitensis was isolated was secured from case reports completed through courtesy of Iowa physicians and through field investigation in cooperation with attending physicians and veterinarians.

TABLE 1.—*Brucella Melitensis Infection in Iowa*

Agglutination reactions with Brucella antigen; dates of receipt of culture or of isolation of Brucella melitensis from blood culture or clot culture in a series of 20 male patients.

No.	Patient	Age	Agglutination		Blood Culture	Clot Culture
			Reaction	Date		
1	J. W.	27	1:1,280	11/11/43	12/11/43	
2	L. K.	30	1:640	2/24/43	12/23/43	
3	O. F.	18	1:1,280	.....	2/25/44	
4	C. C.	36	1:1,280	3/13/44	3/15/44	
5	D. B.	32	1:1,280	6/ 1/44	6/12/44	
6	H. S.	41	1:320	7/ 8/44	.....	7/ 8/44
7	H. G.	33	1:1,280	8/22/44	.....	8/22/44
8	B. R.	19	1:1,280	8/30/44	.....	8/30/44
9	H. A.	32	1:320	9/ 7/44	.....	9/ 7/44
10	H. J.	24	1:320	9/ 7/44	.....	9/ 7/44
11	V. H.	39	1:80	9/13/44	.....	9/13/44
12	H. Q.	36	1:1,280	9/ 9/44	9/19/44	
13	T. H.	51	1:640	10/28/44	.....	10/28/44
14	J. R.	34	1:1,280	10/19/44	11/13/44	
15	L. S.	8	1:160	1/ 8/45	.....	1/ 8/45
16	A. G.	39	1:160	12/30/44	.....	12/30/44
17	J. U.	32	1:1,280	4/18/45	.....	4/18/45
18	M. D.	45	1:640	3/13/45	.....	4/ 5/45
19	A. R.	40	1:1,280	5/ 9/45	.....	6/25/45
20	C. P.	27	1:1,280	5/26/45	.....	5/26/45

Age and Sex Distribution (shown in table 1).—All of the patients were males; the youngest was 8 years of age, the oldest 51. Ten of the 20 were in the age group 30-39, and all but 3 were in the age groups 20-59.

Residence; Occupation.—The patients reside in ten different counties with distribution in central, north central and northeastern Iowa, but including areas as widely separated as southwestern Iowa and the eastern border of the state.

Of the 20 patients 10 were packing house employees; the remaining 10 were farm workers, farm residents or visitors (table 2).

Use of Dairy Products.—Raw milk was used by the patients on farms, while the packing house employees, with one or two exceptions, drank pasteurized milk prior to onset of symptoms.

Contact with Livestock.—Table 2 indicates types of contact with livestock. All of the patients gave the history of direct contact with domestic animals, with one exception. This patient (18, M. D.), a painter, worked on several farms during the months prior to illness. On

one farm he painted a hog house. Hogs are said to have "nosed at the staging." By rubbing or otherwise, these animals may have contaminated ladders or planks conveying infection to the patient indirectly.

It is noteworthy (table 2) that only 7 of the 20 patients concerned gave a history of direct contact with sheep. Two of these patients stated that such contact occurred some years prior to the recent illness. One (9, H. A.) had judged sheep at county fairs in Iowa ten years preceding his illness. The other patient (16, A. G.) had worked with sheep on ranches in Montana during 1935-1937. Whether the history of contact with sheep in the remote past is significant in these cases is problematic and cannot be affirmed. That infection in these 2 instances may be traceable to hogs is suggested by the fact that on both farms (cases 9 and 16, table 2) sows had lost pigs during months preceding human illness. Of the 7 patients who had contact with sheep, 5 had also been in direct contact with hogs, and 3 with cows.

highly probable that further study will reveal that hogs, in addition to serving as the usual reservoir for Br. suis, will also prove to harbor Br. melitensis.

Evidence to show that hogs are susceptible to Br. melitensis has been presented by Huddleson,[5] who states: "Melitensis is pathogenic for the hog. While I was in Malta in 1938 I saw evidence of its pathogenicity. A considerable amount of left-over unpasteurized goat's milk was fed to a group of pregnant sows. All of them aborted. Melitensis was recovered from the fetuses. For some reason this observation was never reported in the literature."

McNutt[6] has reported isolation of Brucella from the organs and tissues of hogs at the time of slaughter. He[7] states that all strains which were isolated from hogs in 1938 were of the porcine type of Brucella, Br. suis.

According to Castenada, Tovar and Velez,[8] Br. melitensis represents the most common type of brucellosis in Mexico. Of 158 strains isolated by these workers, 143 were Br. melitensis, 5 Br. abortus and 2 Br. suis.

TABLE 2.—*Brucella Melitensis in Iowa*

Types of Contact of Twenty Patients, with Available Information Regarding Infection in Animals

No.	Patient	Contact with Animals: Hogs	Cows	Sheep	Other	Probable Place of Exposure	Infection in Animals: History	Agglutination Reactions
1	J. W.	No	No	Yes	....	Packing industry	Undetermined	No current data
2	L. K.	Yes	No	No	....	Packing industry	Undetermined	No current data
3	O. F.	Yes	No	No	....	Packing industry	Undetermined	No current data
4	C. C.	Dock office employee				Packing industry	Undetermined	No current data
5	D. B.	Yes	No	No	....	Packing industry	Undetermined	No current data
6	H. S.	Yes	No	Yes	....	Packing industry and farm	Negative	7 sheep, 4 sows negative on farm
7	H. G.	Yes	Yes	Yes	....	Packing industry	Undetermined	No current data
8	B. R.	Yes	Yes	No	....	Farm	Negative	Cows negative; sows, sheep not tested
9	H. A.	Yes	No	Yes	....	Farm	Sows lost pigs	Cows negative; sows not tested
10	H. J.	Yes	Yes	No	Turkeys	Farm	Negative	Animals not tested
11	V. H.	Yes	Yes	Yes	....	Packing industry	Undetermined	No current data
12	H. Q.	Yes	No	No	....	Packing industry	Undetermined	No current data
13	T. H.	No	Yes	Yes	....	Packing industry	Undetermined	No current data
14	J. R.	Yes	No	No	....	Packing industry	Undetermined	No current data
15	L. S.	Yes	Yes	No	....	Farm	3 sows lost pigs	26 cows negative; 4 sows positive; 1 suggestive
16	A. G.	Yes	Yes	Yes	....	Farm	Sows lost pigs	Sows not tested
17	J. U.	Yes	Yes	No	....	Farm	Litters born alive	8 of 9 sows reacted
18	M. D.	Yes	No	No	....	Painted hog house	Undetermined	No current data
19	A. K.	Yes	Yes	No	....	Farm	10 sows threw pigs	Sows not tested; 3 cows reacted
20	C. P.	Yes	Yes	No	....	Farm	3 sows lost pigs	Sows not tested

History and Evidence of Brucellosis in Animals.—Table 2 presents additional information regarding brucellosis in animals suspected as the probable source of infection. In the group of 10 packing house employees, history of infection in animals is undetermined. Of the 10 instances in which infection was acquired on farms, there was no history of abortion in sheep. On the other hand, on five of these farms, sows had lost pigs and, on a sixth farm, 8 or 9 sows were found to react positively to the agglutination test for brucellosis.

COMMENT

The isolation of Br. melitensis from the blood of persons in Iowa who during the past two years have suffered an attack of brucellosis demonstrates that infection due to this species of Brucella must now be considered endemic in Iowa.

Sheep and goats are regarded as the usual animal reservoirs of infection caused by Br. melitensis. In the series of cases presented in this report, there is no history of contact with goats. Moreover, while 7 of the 20 patients in this series gave the history of direct contact with sheep in the recent or remote past, 12 had direct contact with hogs only and no known contact with sheep. On the basis of epidemiologic findings it is

It is probable that Br. melitensis has been introduced into Iowa during the past decade and that this species of Brucella has been transmitted to hogs from sheep imported originally from western and southwestern sections of this country.

SUMMARY

Brucella melitensis infection is now known to be endemic in Iowa. This organism was isolated from the blood of 20 patients. Isolation of Brucella from the blood culture of patients and from the clot of blood specimens submitted for the agglutination test was of primary importance. Identification of strains as Br. melitensis served as the basis for subsequent field study.

All of the patients were males. Ten were farm residents and 10 packing house employees.

Epidemiologic study of Br. melitensis infection in Iowa incriminates hogs as a probable and major source of infection.

5. Huddleson, Forrest I.: Personal communication to the authors, Dec. 26, 1944.

6. McNutt, S. H.: Brucella Infection in Swine, Proceedings 42d Meeting, U. S. Livestock Sanitary Association, 1938-1939, pp. 90-97.

7. McNutt, S. H.: Personal communication to the authors, April 12, 1945.

8. Castenada, M.; Tovar, R., and Velez, A.: Studies on Brucellosis in Mexico: Comparative Study of Various Diagnostic Tests and Classifications, J. Infect. Dis. **70**: 97 (March-April) 1942.

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Further study is planned, in cooperation with the Bureau of Animal Industry, the State Department of Agriculture and veterinarians, with the purpose of isolating Br. melitensis from the tissues of hogs or other animals incriminated as sources of infection.

BACKACHE

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Separation of the neural arch, a condition which has been described in early papers dealing with vertebral anomalies and spondylolisthesis, has long been recognized, and the importance of this defect of the isthmic zone has been pointed out as the basis for the condition spondylolisthesis. It is also known as prespondylolisthesis, spondylolysis, rachischisis and spondyloschisis. It is probably not too well known that defects of the isthmic zone are frequently encountered, that they can be present without producing symptoms of spondylolisthesis and that they can cause disabling low back pain, especially when the back is subjected to unusual strain. The first case of a combination of spondylolisthesis and protrusion of an intervertebral disk was reported in 1939 by Baker, Love, Cameron and one of us.[1] The frequency of occurrence of separation of the neural arch was pointed out in 1924 and in 1931 by Willis,[2] who found an incidence of 4.28 per cent in 748 skeletons, 3.8 per cent occurring at the last lumbar vertebra. It is our impression that this defect is often present but is unrecognized unless oblique roentgenograms are studied, since routine anteroposterior and lateral views of the spinal column may fail to show it.[3]

The term "isthmic zone" is used to designate the pars interarticularis or isthmus, or that portion of a vertebra between the superior and inferior articular processes. This area is a narrowed bridge of bone and furnishes the only true bony support of the vertebral column. Defects of this bony bridge, or isthmic zone, may be congenital or traumatic, probably both, and it is very likely that defects in bony continuity held together by fibrous or cartilaginous tissue may be ruptured by trauma and precipitate backache, although many patients give a history of long duration and gradual onset.

Chandler,[4] in an attempt to determine whether or not there was any direct connection between developmental defects of the isthmic zone and those which were found clinically or post mortem, made a microscopic study of a series of fetal spinal columns but was unable to show a single instance of divided osteogenetic center of the lamina. Osteogenesis was found to begin in the isthmic portion and to extend gradually in both directions, anteriorly to the pedicle and superior articulation, and posteriorly to the lamina and inferior articulation. He said that "in several instances it was noticed that ossification progressed by forming cystlike spaces, the thin shell of bone replacing the cartilage in the region of the isthmus." He suggested that this might leave a vulnerable spot in the isthmus, which then might give way under certain conditions of stress.

One of us [5] has suggested that an injury at or shortly after birth may produce a bone infarct with resultant softening and later a picture strongly suggestive of osteochondritis. Also he believes that trauma is the exciting factor but that underlying it in most instances is a defect and that injury may be considered the principal etiologic factor and a congenital lesion the anatomic or predisposing factor.

Chandler has expressed the belief that the incomplete fissure occasionally seen in the roentgenogram at the region of the isthmus adds weight to the hypothesis of defective ossification rather than fracture. He stated that "complete division through the isthmus with separation of the fragments must be attributed to trauma, either acute or chronic."

Clinically there may or may not be a history of trauma. Many patients complain of backache of many years' duration, and the majority of them have had

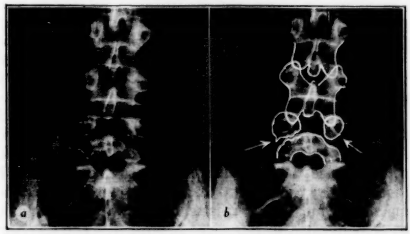

Fig. 1.—*a*, anteroposterior view demonstrating bilateral defects in the isthmic zone of the fifth lumbar vertebra; *b*, defects outlined.

the usual conservative treatment by a number of physicians. They frequently complain of low back pain, with extension across the small part of the back but rarely of pain in the legs. The pain is aggravated in direct proportion to the amount of strain placed on the back, and therefore the complaint of an unusual amount of backache following sitting or standing in one position for a very long time is suggestive of instability resulting from a defect of the isthmic zone. The patients may receive varying degrees of relief of symptoms by decreasing activities, by wearing a firm support to the back or from lying down and resting. The physical examination may reveal that the patient has an essentially normal back, or it may reveal varying degrees of muscle spasm, tenderness and limitation of motion. In some cases there may be extension of pain down one or both legs, and herniation of a disk has been associated with the defect.

The diagnosis depends usually on a careful history and an examination for the defect in those patients whose story suggests instability of the spinal column. At the time of roentgenographic examination of patients

From the Section on Orthopedic Surgery, Mayo Clinic.

1. Meyerding, H. W.; Baker, G. S.; Love, J. G., and Cameron, D. M.: Spondylolisthesis with Protrusion of Intervertebral Disk and Hypertrophied Ligamentum Flavum Associated with Multiple Loose Bodies (Osteochondromatosis) of Right Shoulder Joint: Report of a Case, Proc. Staff Meet., Mayo Clin. **14**: 801-806 (Dec. 20) 1939.

2. Willis, T. A.: Backache from Vertebral Anomaly, Surg., Gynec. & Obst. **38**: 658-665 (May) 1924; The Separate Neural Arch, J. Bone & Joint Surg. **13**: 709-721 (Oct.) 1931.

3. Ghormley, R. K., and Kirklin, B. R.: The Oblique View for Demonstration of the Articular Facets in Lumbosacral Backache and Sciatic Pain, Am. J. Roentgenol. **31**: 173-176 (Feb.) 1934.

4. Chandler, F. A.: Lesions of the "Isthmus" (Pars Interarticularis) of the Laminae of the Lower Lumbar Vertebrae and Their Relation to Spondylolisthesis, Surg., Gynec. & Obst. **53**: 273-306 (Sept.) 1931.

5. Meyerding, H. W.: Spondylolisthesis, Surg., Gynec. & Obst. **54**: 371-377 (Feb.) 1932; Spondylolisthesis as an Etiologic Factor in Backache, J. A. M. A. **111**: 1971-1976 (Nov. 26) 1938; Low Backache and Sciatic Pain Associated with Spondylolisthesis and Protruded Intervertebral Disk: Incidence, Significance and Treatment, J. Bone & Joint Surg. **23**: 461-470 (April) 1941; Spondylolisthesis: Surgical Treatment and Results, ibid. **25**: 65-77 (Jan.) 1943.

who have other conditions of the lower part of the back the defect is also found incidentally. Anteroposterior roentgenograms frequently suggest defects of the isthmic zone but seldom reveal them as plainly as those demonstrated in figure 1 *a* and *b*. Fairly frequently defects of the isthmic zone are not detectable at all in

Fig. 2.—*a*, lateral view demonstrating defect of pedicle of fifth lumbar vertebra; the separation is obvious; *b*, same as *a* but outlined so as to stress the defect of the pedicle.

the anteroposterior views. When they are seen they show up just inferiorly to the shadow cast by the pedicles. The lateral roentgenogram shows a higher percentage of defects of the isthmic zone than does the anteroposterior view, provided the defects are large enough and in the right plane; unilateral defects usually are obscured. The defects, as shown in the lateral roentgenogram figure 2 *a* and *b*, are large and are associated with spondylolisthesis, grade 1 (on the basis of 1 to 4, in which 1 designates the least and 4 the greatest degree of spondylolisthesis) (Meyerding). The oblique or three-quarter view is extremely important in determining the diagnosis, and it is seldom that a defect cannot be demonstrated in this view, if present. The superior articular process, the isthmic zone and the inferior articular process show a "bow tie"[6] shadow on the roentgenogram, and the isthmic zone or the center of the "bow tie" is especially demonstrable in the oblique

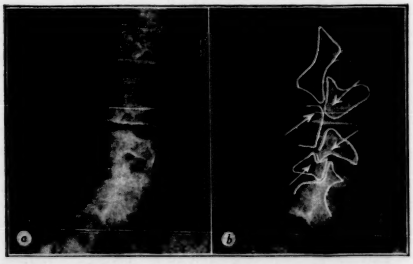

Fig. 3.—*a*, left oblique view demonstrating defects of the isthmic zone of the fourth and fifth lumbar vertebrae; *b*, defects outlined.

view. The "bow tie" extends over the intervertebral space below the lumbar vertebra to which it belongs. Defect of the fourth and fifth lumbar vertebrae are demonstrated in figure 3 *a* and *b*, and a defect of the fifth lumbar vertebra with sclerosis and irregularity suggesting an osteochondritic process is demonstrated in figures 4 *a* and *b*. The defect shown in figure 6 *a* and *b* is angulated and outlined with sclerotic bone suggestive of a traumatic origin. The bilateral defects demonstrated in figure 5 *a*, *b*, *c* and *d* are so large that they could be classified as a congenital defect. It is probable that the defect shown in figure 7 *a* and *b* is a congenital one involving the fourth lumbar vertebra with additional localized hypertrophic changes of the fourth and fifth lumbar vertebrae.

The majority of our patients have been treated conservatively with supports to the back, rest, sleeping on a firm bed, application of heat and massage to the back and exercises to strengthen the muscles of the back. Patients who have not responded to conservative treatment have made good progress following fusion of the spinal column by means of double bone grafts inserted over the portion in which the defect is situated, an operation which has been described by one of us (Meyerding). Defects of the isthmic zone are also one of the criteria for bone grafting in cases in which surgical removal of a herniated disk is done.

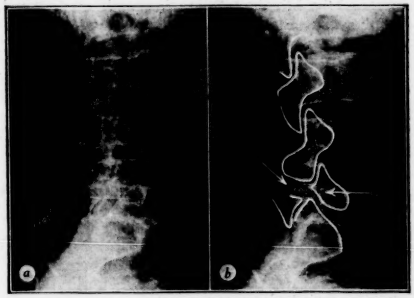

Fig. 4.—*a*, left oblique view demonstrating sclerosis and irregularity of the fifth lumbar vertebra; *b*, outlined to show "bow tie" defect of fifth lumbar vertebra.

COMMENT

We have attempted to call to the attention of the medical profession a fairly common lesion of the spinal column that is responsible for low back pain and to reemphasize the importance of the oblique roentgenogram in determining the diagnosis in cases in which the patient has obscure backache and a weak, unstable back. Treatment is directed toward increasing the stability of the lower part of the spinal column.

REPORT OF ILLUSTRATIVE CASES

The following patients complained of low back pain and were seen at the Mayo Clinic during routine examination, which revealed typical defects of the isthmic zone:

CASE 1.—A housewife aged 36, seen in October 1944, complained of low backache of four and a half years' duration. She stated that her symptoms had followed a fall in which the shoulder received most of the injury, that the pain was an aching type and was limited to the lumbar and left sacroiliac regions with occasional extension to the left leg, that the pain was aggravated by sitting, and that she would get a catch in the lower part of the back when rising from a stooping position. She had no aggravation of the symptoms on coughing or sneezing and no morning stiffness.

The laboratory examination of urine and blood and roentgenograms of the spinal column and pelvis gave negative results.

6. Galluccio, A. C.: Spondylolisthesis: A General Consideration, with Emphasis on Radiologic Aspects, Radiology 42: 143-158 (Feb.) 1944.

The patient was sent home to try conservative treatment consisting of reduction of weight, baking and massage to the back and the use of a lumbosacral support. Three and a half months subsequently she returned with the same complaints. Anteroposterior roentgenograms at this time revealed an apparent defect of the isthmic zone of the fifth lumbar vertebra, which was confirmed by oblique roentgenograms. Following neurologic consultation, an exploration for protruded intervertebral disk was performed by the neurosurgeon with negative findings. After this a double bone grafting procedure was carried out by the orthopedic surgeon to produce a fusion of the lumbosacral segment of the spinal column. At three and a half months postoperatively, too early to evaluate the final result, the patient has obtained definite relief of symptoms.

CASE 2.—A nurse aged 45, seen in February 1945, complained of low back pain which had been present all her life. She stated that she had undergone hysterectomy eight years prior to her admission but that there had been no relief from her backache, which had become more severe during the six months before examination, and she had had occasional extension of

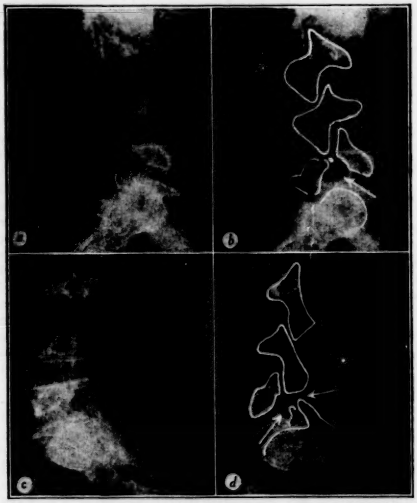

Fig. 5.—*a*, left oblique view demonstrating a large defect of the isthmic zone of the fifth lumbar vertebra; *b*, same as *a* with defect outlined; *c*, right oblique view showing large defect of the isthmic zone of the fifth lumbar vertebra; *d*, same as *c* with defect outlined.

pain to the left thigh and leg. Examination gave negative results except for a slight diminution of the left ankle jerk. The laboratory examination of the blood and urine revealed negative findings. The roentgenograms showed defects of the isthmic zone of the fifth lumbar vertebra with spondylolisthesis, grade 1. There was considerable separation of the neural arch plainly demonstrated in the lateral roentgenogram. The patient is receiving conservative treatment consisting of heat and massage, rest and the use of a lumbosacral corset, from which she has derived considerable benefit. Lumbosacral fusion has been advised if aggravation of symptoms occurs.

CASE 3.—A man aged 44, a worker in a dry cleaning establishment, seen in January 1945, complained of low back pain which had troubled him for about twelve years and had become more severe and constantly present during the two years just prior to admission. He stated that several years prior to his admission he had had slight pain down the right leg but that he had none at the time of admission. The attacks of pain had never confined him to bed, but they had interfered with his work. He said that he slept better on the floor than on his bed and that the pain was worse on exertion or strain and was relieved by rest. Examination of the back revealed muscle spasm and limitation of motion; that of the lower extremities gave normal results. Laboratory examination of the blood and

Fig. 6.—*a*, right oblique view demonstrating a defect of the isthmic zone of the fifth lumbar vertebra with sclerotic change; *b*, defect outlined.

urine revealed negative results. The roentgenograms revealed defects of the isthmic zone of the fourth lumbar vertebra with spondylolisthesis grade 1 of the fourth lumbar vertebra on the fifth. The disk interspaces were explored by a neurosurgeon, at which time the only positive findings were slight thickening of the ligamentum flavum and extreme mobility of the neural arch of the fourth lumbar vertebra. Following this part of the operation a double bone grafting procedure to produce a fusion of the last three lumbar vertebrae to the sacrum was performed by the orthopedic surgeon. Though it is too early to report the final results, the patient has made a satisfactory convalescence to date.

CASE 4.—A farmer aged 33, seen in February 1945, complained of attacks of low back pain for many years' duration. He said that he would have two or three severe attacks each year but that there had been no extension of the pain to his legs until he sustained a fall about a month prior to admission. After this fall he had had pain down the left leg to the foot for the first time. The laboratory examination of the blood and urine gave negative results. The oblique roentgenograms revealed defects of the isthmic zone of the fourth lumbar vertebra. The exploration was performed by a neurosurgeon, and a protruded intervertebral disk, fifth lumbar vertebra, was

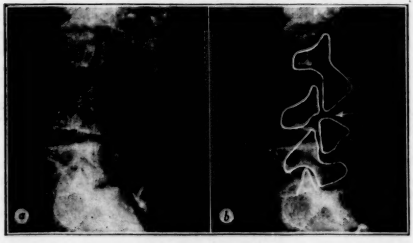

Fig. 7.—*a*, right lateral view demonstrating congenital defect of the isthmic zone of the fourth lumbar vertebra with hypertrophic changes of the fourth and fifth lumbar vertebrae showing anteriorly; *b*, defects outlined.

removed. After this part of the operation was completed, the orthopedic surgeon performed a double bone graft to produce a fusion of the lumbosacral segment of the spinal column. The patient has made satisfactory progress, with apparent relief of symptoms at the time of the writing of this paper.

CASE 5.—A man aged 50, a hardware clerk, seen in March 1945, complained of constant low backache with extension of pain to the iliac crests, which had followed a fall on the flat of his back about six months prior to his admission at the clinic. He stated that there had been no extension of pain to the legs but that heavy lifting and stooping caused aggravation of his symptoms, that he had had more pain when sitting than when standing and that heat, rest and wearing of a supporting corset had helped to some extent. The laboratory examination of the blood and urine gave essentially negative results. The oblique roentgenograms revealed defects of the isthmic zone of the fifth lumbar vertebra with spondylolisthesis grade 1. The patient elected a trial of conservative treatment, which is being carried out at the time of the writing of this paper.

CASE 6.—A carpenter aged 53 gave a history of a fall of 20 feet three years prior to his admission, at which time the back was injured and since which time he had had constant dull aching pain, stiffness and soreness of the lower part of the back. He said that the pain in the back was aggravated in direct proportion to activity and stress placed on the back, that it was worse at night than in the morning and that there had been no extension of pain to the legs. The examination of the back gave essentially negative results. The laboratory examination of the blood and urine gave negative results. The oblique roentgenograms of the lumbar segment of the spinal column showed defects of the isthmic zone of the fourth lumbar vertebra. The patient is having conservative treatment, consisting of baking and massage. The avoidance of excessive activity, of jarring and strain of the back and of trauma was advised.

CASE 7.—A housewife aged 35, seen in March 1945, stated that she had had backache for the first time following a fall down a basement flight of stairs about five years prior to her admission at the clinic. She said that about two years prior to admission the pain in the lower part of the back began to extend down the buttock and into the thigh and that ten months before she came to the clinic it became more constant in character and exertion and strain aggravated it. She also said that it was worse when she was fatigued or after sitting for a time but that the pain in the leg was minimal. The laboratory examination of the blood and urine gave negative results. The physical examination was essentially negative. In this case the anteroposterior, lateral and oblique roentgenograms revealed defects of the isthmic zone and spondylolisthesis grade 1. The oblique roentgenograms revealed bilateral open neural arches of the fifth lumbar vertebra. An exploration at the lumbosacral interspace for a protruded intervertebral disk was found negative by the neurosurgeon. After this part of the operation the orthopedic surgeon performed a double bone graft to the lumbosacral segment of the spinal column; the grafts extended from the third lumbar vertebra to the sacrum. The patient has been making satisfactory progress to date.

Effects of Closed Cranial Injuries.—In about 11.5 per cent of the fatal cases of injury to the head there is found at autopsy some evidence of injury to the upper brain stem in the form of compression, distortion or hemorrhage in the tegmental or basilar portions or both. Such lesions may be the result of general disturbance (traumatic shock to the head, air or fat embolism), of local pressure (by extramedullary hemorrhage) or regional injuries (basal fractures or penetrating foreign bodies), of sudden lateral dislocations of the brain mass, of a coup-contrecoup mechanism (falls or projections on the back of the head), of the effects of pressure from one or both sides by a swollen and/or dislocated temporal lobe (extradural or subdural hemorrhage, subdural fluid accumulation, severe contusions or hemorrhages of the temporal lobe with consequent edema or edema alone) or, finally, of a combination of two or more of these mechanisms. In some cases the vascular lesions may be predisposed to irregular development (vascular anomalies, hypoplasia) or to disease (syphilis, arteriosclerosis). In a few cases the situation may defy analysis and the exact mechanism remain an enigma.—Courville, Cyril B.: Effects of Closed Cranial Injuries on the Midbrain and Upper Pons, in Trauma of the Central Nervous System, Baltimore, Williams & Wilkins Company, 1945.

Clinical Notes, Suggestions and New Instruments

DYSPNEA IN HEMOPHILIA FROM HEMORRHAGE INTO LARYNX

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Hemorrhage from the lower respiratory tract is a relatively rare occurrence in hemophilia. Little stress, however, has been placed on the fact that involvement of the pharynx and larynx by blood extravasations beginning at or above these organs are not uncommon in these patients. Occasionally the extent of the hemorrhage may be such as to interfere with phonation, swallowing and even breathing. In 2 of the instances herein recorded strenuous use of the voice preceded the onset of the manifestations. Hemophilic hemorrhages commonly follow muscular exertion. Even in normal persons, excessive and loud use of the voice may be accompanied by hemorrhage and edema of the larynx,[1] which usually disappear with rest. These observations suggest that in hemophilic patients this type of hemorrhage may take an exaggerated form and progress to the point of producing serious obstruction to the air and food passages.

REPORT OF CASES

CASE 1.—R. D., a white man aged 30, an insurance adjuster, admitted to the bronchoscopic ward of the Jefferson Hospital to the service of Dr. L. H. Clerf because of shortness of breath, coughing and inability to talk, had a serious argument two days previously with a recalcitrant customer and attempted to "talk the other man down" for most of the afternoon. He spoke in a loud tone for a total period of time of about four hours. That evening his throat felt a little sore, and the next day the soreness increased. He had some difficulty in swallowing and was somewhat short of breath. He attributed these symptoms to a mild respiratory infection, though he had no fever or any other constitutional symptoms. On admission to the hospital two days after the onset of the symptoms, he was having paroxysmal attacks of cyanosis and dyspnea. The mouth secretions had to be expectorated, since attempt to swallow caused a spill into the trachea followed by painful coughing.

The patient's temperature was normal, and mirror laryngoscopy showed the vocal cords immobilized in a position of adduction. The arytenoids and aryepiglottic folds were greatly swollen and dark, indicating the presence of a hemorrhagic process in the entire posterior larynx. There was no external swelling of the neck or tenderness on palpation. Because an acute infection was thought to be responsible, he was given penicillin and fluids intravenously. The patient had not told the physician that he was hemophilic. The hemoglobin on admission was 84 per cent and the red blood cell count 4,000,000.

Three hours after admission it was necessary to perform a tracheotomy. A number 5 tracheotomy tube relieved the dyspnea, but the tissues which surrounded the wound continued to bleed actively for several days. Repeated interrogation then elicited from the patient the written statement that he was hemophilic. This was later confirmed by other members of his family, who said that he and one brother had had in the past several episodes of bleeding requiring transfusions. Studies of his blood revealed a venous clotting time of three and one-half hours (glass tube) and of five hours (collodion coated tube). The plasma prothrombin was 100 per cent of normal. The swelling of the tissues of the neck continued to increase until it reached the appearance illustrated in figure 1.

Between June 3 and June 17, 1945 the patient received the following intravenously:

Isotonic plasma, four infusions of 500 cc. each. Citrated whole blood, six infusions of 500 cc. each and one infusion of

From the Departments of Laryngology and Medicine, Jefferson Medical College and Hospital.

1. Clerf, L. H.: Personal communication to the authors.

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1,500 cc. Red blood cell suspension, four infusions of 1,000 cc. each and one of 500 cc. A total of 11,000 cc. of blood or blood substitutes was given. By the fourth day after the tracheotomy the neck began diminishing in volume, and by the seventh day some air was passing through the larynx. On the tenth day the tracheotomy tube was corked, and on the eleventh day the tube was removed. Healing of the tracheotomy wound was unusually slow; by July 13 the lips of the wound were still apart. Bleeding did not stop permanently until twenty-three days after the wound was made.

CASE 2.—N. F., a man aged 31, Italian, a laborer, known to be hemophilic for twenty years, reported to work feeling well on Jan. 12, 1943. A new man was assigned to work with him on a long machine and, since he was inexperienced, required frequent directions. Because of the great din in the shop the patient had to shout his directions to him to be clearly heard at the other end of the machine. This shouting continued off and on for about three hours, when he began to feel some soreness in the throat and difficulty in swallowing. He then stopped the shouting but gradually became hoarser and felt his neck swelling. When he left the plant in the afternoon he could hardly speak. At 2 a. m. he was awakened with a sore throat and felt that his neck was more swollen. He had a sensation of a lump on either side of the throat. He was admitted to the medical ward of the Jefferson Hospital, service of Dr. H. A. Reimann, the day following the onset of the disease. He had a slight leukocytosis and a temperature of 100 F. The venous blood coagulation time was two hours and twenty-five minutes (glass tube); the hemoglobin, red cell and platelet count were normal. Laryngologic examination revealed what appeared to be an acute laryngitis and swelling in the region of the epiglottis. This swelling was so great that it was considered wise to introduce a nasal feeding tube at this time. Roentgenologic examination of the neck showed a soft tissue density between the lower mandible and the hyoid bone. This soft tissue mass was apparently depressing the hyoid bone and also infringing on the air space of the hypopharynx. The clinical impression was hemophilic hematoma of the soft tissues of the neck in the region of the epiglottis. Because there had not been much loss of blood, a transfusion of 500 cc. of two day old citrated blood was given after removing 500 cc. of blood from the patient. He was given a liquid diet and cautioned not to talk. Improvement began about a day after the transfusion, much of the tenderness, hoarseness and swelling disappearing gradually. Simple inspection of the throat at this time revealed large hemorrhagic areas about the posterior pillar of the tonsils, which had not been present at the time of admission and probably represented a dissecting spread of the extravasated blood.

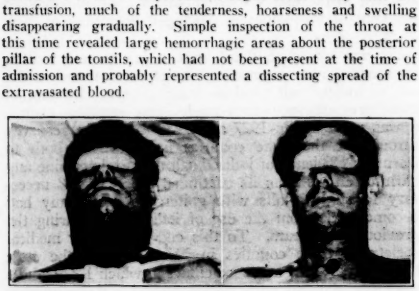

Fig. 1 (case 1).—Left, appearance when the swelling of the neck was at its highest. Right, appearance ten days later.

COMMENT

These 2 patients demonstrate perhaps two different degrees of involvement of the larynx and adjoining tissues by edema and hemorrhage. The cause of the bleeding could be traced in both instances to overuse of the voice. That hemorrhage so initiated may, in this location, constitute a serious threat is probably not generally recognized. It is understandable that, at first sight, an infectious process may seem to be the cause of the disorder. The lack of serious constitutional symptoms and, as in case 1, the absence of fever indicate a noninfectious disorder.

Deep seated hematomas in the neck region leading substantially to the same problem encountered in these patients have been described following dental extractions in the hemophilic. Endicott, Mitchell and Qvist [2] reported asphyxia and death in a hemophilic due to massive hemorrhagic infiltration of the floor of the mouth. These authors traced the path of the extravasation of blood in their patient, who had had an extraction of a second right lower molar tooth and died sixty-six hours later. According to Endicott and his co-workers [2] the blood

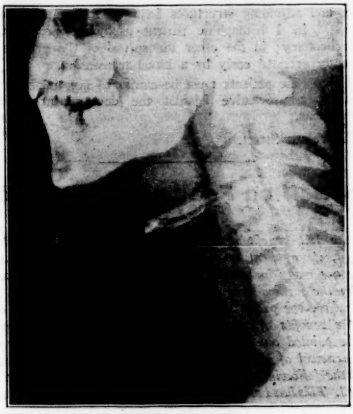

Fig. 2 (case 2).—Lateral view one day after admission. Note downward displacement of hyoid bone by soft tissue mass below the mandible.

extravasated from the floor of the mouth and dissected downward through the base of the tongue in the plane above and behind the mylohyoid muscle and the hyoid, thus reaching the submucous tissues of the aryepiglottic region and thence the submucosa of the larynx.

In instances similar to the case reported by Endicott and his co-workers [2] the hemorrhagic and traumatic nature of the infiltration into the deep cervical tissues is clear. When the hemorrhage, however, starts in the deep tissues themselves, as for example in a muscle mass, the true nature of the process may not at first be evident. Hematomas in the larynx may result from violent abuse of the voice, as in singing, shouting or screaming.[1] These hematomas, which are not absorbed as a rule, become, if left alone, organized into a small firm tumor that has been called a fibroangioma.[3] A form of hemorrhagic involvement of the larynx following violent and prolonged use of the voice has been described as "hemorrhagic laryngitis," though inflammation may or may not be present. The condition has been observed in hemorrhagic disorders [3] but, so far as we know, not to the alarming degree noted in our 2 patients. The cases herein reported demonstrate that such excesses may lead to serious complications in a hemophilic person and that the disorder may not necessarily be a complication of an infectious state. Whether the hemorrhage starts in the vocal cords themselves or spreads into them from adjoining structures is difficult to determine. It is possible that the hemorrhage actually comes originally from the accessory muscles of the larynx, which during loud and prolonged shouting would be put under excessive strain.

It is wise, therefore, to include among the recommendations for the management of hemophilic patients that they refrain from excessive or strenuous use of the voice. This caution is in line with the usual recommendations against muscular excesses of any type in these patients. It is likewise important

2. Endicott, C. L.; Mitchell, J. H., and Qvist, George: Asphyxia Following Dental Extraction in a Hemophiliac, Brit. M. J. 2:34 (July 11) 1942.

3. Jackson, Chevalier, and Jackson, C. L.: The Larynx and Its Diseases, Philadelphia, W. B. Saunders Company, 1937.

to bear in mind that a "hemorrhagic laryngitis" in a man may be a manifestation of a congenital or acquired disorder of hemostasis. Whenever possible, if the patient is hemophilic a small citrated blood transfusion should be given early. This would check the bleeding, prevent the spread of the hemorrhage and thus render a tracheotomy (with its attending risks in a hemophilic patient) unnecessary.

SUMMARY

1. In 2 hemophilic patients hemorrhage in and about the larynx and adjoining structures followed loud and prolonged shouting. In 1 hemophilic patient asphyxia was prevented by tracheotomy; in the other the spread of the process was apparently arrested early by a blood transfusion.

2. Hemophilic patients must be cautioned not to abuse their voices as a preventive against the development of these complications.

1025 Walnut Street.

Council on Foods and Nutrition

If the full benefit of any public health measure is to be realized, its application must be widespread and continuous. There are many indications that interest in and use of iodized salt by the medical profession and the public is waning to a point where the public health may suffer as a result. In order that the benefits of regular usage of an iodine containing salt may be pointed out once again and the importance of the need for a renewal of interest stressed, Dr. Kimball has kindly prepared the following review of the subject at the request of the Council. This has been authorized by the Council for publication.

GEORGE K. ANDERSON, M.D., *Secretary.*

IODIZED SALT FOR THE PROPHYLAXIS OF ENDEMIC GOITER

O. P. KIMBALL, M.D.
Cleveland

It is necessary again to review the problem of goiter prophylaxis. There are ample data proving that endemic goiter can be prevented and simple, practical methods of prevention are known. The present need is to place this important public health problem under the proper authority so that it will be continued generation after generation.

The prevention of endemic goiter in man on a large scale was begun in 1916. This research was started through the public schools in Akron, Ohio, by Marine and Kimball and was described in detail at that time.[1] By 1920 it had been shown most convincingly that endemic goiter in adolescent girls could be prevented by keeping the thyroid saturated with iodine. From 1920 to 1924 many cities both in the United States and abroad were carrying out parallel programs for the prevention of goiter.

During these same years an improved method for determining minute quantities of iodine was developed, and by 1924 the water in our endemic goiter regions had been analyzed. In Michigan analyses were made of food and water throughout four counties diagonally across the state, namely Houghton, Wexford, Midland and McComb, and the resulting data were used as representative of conditions throughout the state. Final conclusions were that the amount of iodine in the water supply is an accurate index to the food iodine found in that section.[2]

The iodine content of the water in Houghton County was found to be "nil" and 64.4 per cent of all the school children in this county had distinct thyroid enlargement or simple goiter. In Wexford County the iodine content was 0.5 part per billion and the incidence of goiter was 55.6 per cent. In Midland the iodine content was 7.3 parts per billion with the incidence of goiter 32.7 per cent and in McComb County, where the iodine content was the highest, namely 8.7 parts per billion, the incidence of goiter was only 26 per cent. In these counties there were 65,537 children examined and the incidence of simple goiter was 38.6 per cent. This was considered the average for the state of Michigan. The results of this survey showed beyond a doubt that there is a direct relationship between the scarcity of food iodine and a high incidence of simple goiter.[2]

The Michigan State Department of Health and the Michigan State Medical Society made the first organized effort to prevent goiter by the use of iodized salt.[3] The salt producers agreed to make a table salt containing potassium iodide 0.02 per cent. The wholesale grocers agreed to handle, as far as possible, only iodized salt for table use. The cost of this iodine was borne equally by the producers and by the wholesale grocers, so that the cost to the consumer was the same as for the ordinary table salt. Neither the manufacturer nor the wholesale grocer was to advocate the use of iodized salt or to advertise it in any way. Promotion was left entirely to the state department of health and to the medical profession. Lectures, newspaper articles, radio talks and placards in every school explained briefly the thyroid gland, its function and chemistry. The dependence of normal thyroid function on iodine was stressed, and the deficiency of iodine as the sole cause of endemic goiter was repeatedly emphasized. This campaign resulted in the use of iodized salt in approximately 75 per cent of the homes in Michigan beginning in May 1924.

As was expected, there were a few papers written by medical men expressing anxiety and fear lest the use of iodized salt produce toxic goiters. Because of these few articles, which made some startling claims, it was necessary in 1927 and 1928 to make a resurvey throughout the same counties in Michigan, both to learn the efficiency of iodized salt and to determine any harmful effects from its continued use.[2] It was necessary to study adults with goiters to see if any had become toxic from the use of iodized salt during the previous four years. To this end the county medical society in three counties in Michigan and the state health department arranged clinics in which 1,229 adults with long-standing goiters were studied. Of this number 4.1 per cent of those who had used iodized salt continuously for four years had developed symptoms of toxic goiter, while 55.5 per cent of those who had purposely avoided its use were found to have toxic goiter. Stated briefly, the use of iodized salt was a very efficient and practical method of goiter prophylaxis and found to be entirely safe.[2] This survey also included a study of over 50,000 children in the same schools

1. Marine, David, and Kimball, O. P.: The Prevention of Simple Goiter, J. Lab. & Clin. Med. **3**: 40-46 (Oct.) 1917; The Prevention of Goiter in Man, Arch. Int. Med. **25**: 661-672 (June) 1920. Kimball, O. P.: The Prevention of Simple Goiter in Man, Am. J. M. Sc. **163**: 634 (May) 1922.

2. Kimball, O. P.: The Efficiency and Safety of the Prevention of Goiter. Olin, R. M.: Iodine Deficiency and Prevalence of Simple Goiter in Michigan, Michigan Health Rep. **21**, May 10, 1924; J. A. M. A. **82**: 1328 (April 26) 1924.

3. Kimball, O. P.: Endemic Goiter and Public Health, Am. J. Pub. Health **18**: 587 (May) 1928.

where four years previously we had examined 65,000. The results were as follows: In Wexford County the incidence of goiter had dropped from 54.6 per cent in 1924 to 17.2 per cent in 1928; in Midland County the incidence had decreased from 32.7 per cent to 8.8 per cent; in the city of Grand Rapids, where in 1923 the incidence of goiter was 30 per cent, in 1928 it was down to 9 per cent. Throughout this resurvey not a child was found who showed the slightest ill effect from the use of iodized salt.

Even though it had been only four years since our original program of education, it was necessary to campaign again throughout the state, emphasizing the good results and the safety of this prophylactic measure. Again in 1934 and 1935 the school physicians were reporting an increase in the number of small colloid goiters in children. Simultaneously the wholesale grocers reported a decrease in the percentage of iodized salt consumed in Michigan. There was a renewal of the fear of using iodized salt and a return of the same question—why use a "medicated" salt? This question had been answered in every published article on goiter prevention and every school placard throughout the state, but this type of education seems to last for only a few years and each generation has to be told again.

The last survey was made in 1936 and included the same four counties of Michigan and the city of Grand Rapids. In this study 61,429 children were examined. The incidence of goiter had dropped from the original figure of 38.6 per cent in 1924 to 8.2 per cent. Among those using iodized salt regularly the incidence of goiter was only 2.88 per cent. A valuable study was possible in the comparison of two cities, Houghton and Calumet, in Houghton County.[4] These two cities were only 30 miles apart; consequently the natural factors determining goiter would be the same. However, the percentage of goiter in Houghton High School was 12.12 and in Calumet High Schools 28.72. Calumet is a mining town, and approximately two thirds of the families were on relief during the years 1932 to 1935 and only noniodized bag salt was furnished to families on relief. In the period of three years with the only source of food iodine closed to the homes on relief, goiter was seen to be proportionately as prevalent as ever.

The incidence of goiter among the school children of Cleveland in 1924 was 31 per cent. In this community, however, the prevention of goiter and especially the generalized use of iodized salt had been frankly and repeatedly criticized. There was such a widespread fear of the so-called "dangers of iodized salt" that less than one half of the homes in Cleveland ever used it. In 1937 a resurvey showed the total incidence of goiter to be 18.5 per cent. Among those using iodized salt regularly it was 7.7 per cent, and among those not using it at all the incidence of goiter was 30.7 per cent, or practically the same as in 1924, before any preventive measures had been introduced.[5]

At present, 1945, ten years have elapsed since the last organized study and campaign for goiter prevention. No such study or campaign is being considered at present. The only information available is in the clinical studies and personal findings of physicians interested in the prevention of goiter. During the past two years, in examining school children in Detroit and Cleveland, I have found numerous small or moderate sized goiters. These were the typical hyperplastic thyroids or colloid goiters found so frequently among adolescent children of this area before prophylaxis was started. In each case they definitely were not using iodized salt and had not used it for one or more years. In some instances there was the same prejudice against "medicated" salt, while in the majority of cases they had just forgotten to demand it. Several families had decided that, since nothing had been heard about goiter prevention for several years, they concluded the "epidemic" was passed and therefore purposely used plain salt.

Complete information on the amount of iodized and plain salt used each year is not available. The only information obtainable is the statement by the salt producers that the percentage of iodized salt consumed has gradually decreased during the past four or five years.[6]

In spite of the many surveys in this country and abroad there appears to be no cumulative knowledge among the general population about the cause and prevention of endemic goiter. Furthermore, there is an abundance of data on the efficiency and safety of iodized salt as the means of prophylaxis; yet the consumption by the general public gradually decreases unless repeated campaigns are made by state health departments to encourage its use.

After the last survey in Michigan in 1936 it was strongly urged that each state where goiter is endemic should make a similar campaign of education every ten years.[5] No such effort has been put forth by a single state.

The ideal method would be the same form of goiter prevention the people of West Virginia enjoyed until 1900 or, more accurately, until the salt companies of Ohio and Michigan produced a refined table salt and promoted its sale throughout the state.[3] Prior to that date there was no endemic goiter in West Virginia, but by 1922 the evidence of endemic goiter was as high as in the Lake Superior region: around 60 per cent of adolescent girls had goiter. According to records and information from the older physicians there were, prior to 1900, no toxic adenomatous goiters and only rarely did they encounter a case of toxic diffuse goiter. There had been no effort to prevent goiter in this section, but fortunately the only salt was a natural, unrefined salt commonly spoken of as a coarse brown salt. In 1924 analyses showed that this unrefined salt contained iodine equivalent to 0.01 per cent potassium iodide.[3] It was this natural unrefined salt of the Kanawa River Valley in West Virginia, with the perfect record of prevention of endemic goiter, which set the pattern for the so-called iodized salt.

My recommendation would be that the American Medical Association, the American Public Health Association and the Federal Food and Drug Administration cooperate to give the entire country a natural salt containing 0.01 per cent potassium iodide or its equivalent. The term "iodized" should be eliminated at once and emphasis be placed on the use of a whole salt or natural salt to prevent food deficiencies. The need is for only one kind of salt and this standardized so that it contains the important food elements which are found in the natural unrefined salt. The "prevention of endemic goiter" will then be as nearly completed as any public health measure can ever be.

4. Kimball, O. P.: Twenty Years in the Prevention of Goiter (1916-1936), Ohio State M. J. **35**: 705 (July) 1939.
5. Kimball, O. P.: The Prevention of Goiter in Michigan and Ohio, J. A. M. A. **108**: 860 (March 13) 1937.
6. Personal communications to the author.

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SATURDAY, JANUARY 12, 1946

DECOMPRESSION SICKNESS

Students of aviation in World War II have focused their attention on a series of symptoms which may manifest themselves at altitudes as low as 35,000 feet and which are unrelated to such obvious causes as lack of oxygen, ear and sinus trouble or intestinal pains. These symptoms, grouped under the term "decompression sickness," vary from a mild rash, hyperesthesias, anesthesias or tightness in the chest to more severe manifestations such as excruciating pain about the joints, severe cough, convulsions, paralysis and syncope. These symptoms are well known to divers and caisson workers and are referred to by them as "bends," "chokes," "itch" and "staggers." Compressed air illness is due to bubble formation in the blood and body tissues; symptoms of caisson disease can be readily alleviated by recompressing the patient and then decompressing more slowly. Experience at simulated high altitudes likewise indicates that recompression to lower altitudes (even a change from 35,000 to 25,000 feet) will also instantly relieve bends and chokes but that on immediate reascent the pain will reappear in exactly the same place.

According to Harvey[1] the tendency for bubbles to form depends on two factors: on gas dissolved and on pressure in the liquid. He demonstrated in experiments that bubbles must arise from gas nuclei sticking to or forming on or within the endothelial linings of the vascular system or extravascular spaces; only when they have enlarged to the point of instability do they pass into the blood stream. Harvey performed experiments on cats in which the animal was anesthetized with pentobarbital sodium. Its abdomen was opened and the viscera were pushed aside, thus exposing a considerable length of the postcava. When the cat was placed in a horizontal position in the altitude chamber and well illuminated, observations could be readily made through the glass observation ports, and bubbles of 0.2 mm. diameter could be seen within the veins. The altitude maintained in the chamber was about 45,000 feet. With the animal at rest, bubble formation was rarely observed in the postcava. However, if the hind legs of the cat were stimulated vigorously, bubbles from limb veins could be observed moving up the postcava, sometimes within five seconds of stimulation. If only one leg was stimulated, the bubbles formed in the leg appeared in veins draining that leg only. This important discovery of the effect of muscle contraction on appearance of bubbles was first made, according to Harvey, by Whitaker, Blinks and their collaborators and has its practical application in the well recognized fact that straining movements and exercise among aviators is the most important predisposing factor for the development of bends and chokes. Harvey points out that muscular exercise must have a beneficial effect in preventing bubble formation by virtue of the vasodilatation and opening of closed capillaries in muscle tissue as well as of the increased circulation and hyperventilation necessary to remove carbon dioxide rapidly from the blood. The relative influence of these two opposing factors—the enlargement of gas nuclei by muscle contraction and the increased gas elimination due to similar activity—will determine how much and how strenuous the exercise can be. Actually, experience has shown that in man preexercise at ground level before ascent, even when combined with oxygen breathing, will completely prevent the appearance of decompression sickness and offers the most effective prophylactic treatment. In man the amount of oxygen breathing necessary has also been shown to depend on the extent of exercise at altitude. Numerous x-ray studies made in altitude chambers have disclosed the presence of air masses in joint cavities, in popliteal fat and in the fascia between muscles. All observers agree that air may be present in these regions without the pain of bends. Gas in popliteal fat and muscle fascia appears most likely to cause pain. Another theory of the cause of pain in bends refers it to the pain of muscle contraction in absence of oxygen described by Sir Thomas Lewis. The fact, however, that local application of pressure or even a blocking of the blood flow by tourniquet above the painful region will relieve bends is contrary to the intravascular embolism theory.

Nervous symptoms are more difficult to analyze. They could be due to gas blocking capillaries of the central nervous system or to gas in nerve sheaths exerting pressure on nerve trunks. Whatever the genesis of the various symptoms, the etiology of decompression sickness has been demonstrated to be due to bubble formation.

1. Harvey, E. N.: Decompression Sickness and Bubble Formation in Blood and Tissues, Bull. New York Acad. Med. **21**: 505 (Oct.) 1945.

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BRITISH PROPOSALS FOR SEX EDUCATION

Education on the biology of sex is still limited to but a few of our population. In an address to the annual general meeting of the British Eugenics Society Bibby [1] presented his philosophy of sex education. He outlined briefly the transfer in 1942 of the major part of the work of the British Social Hygiene Council to the Central Council for Health Education, thus giving official support to sex education. He quoted figures indicating that sex education lectures had been given during 1943 and 1944 to audiences totaling approximately 68,000 persons, plus an additional 230,000 attending meetings dealing with venereal diseases. This he describes "quantitatively—fairly satisfactory." Bibby summarized the objectives of sex education as "preparation to live a joyous, well planned and fruitful life." He discounted the value of mortality produced by threats of fire and brimstone. He does not believe that the teaching of biologic facts will of itself assure satisfactory conduct. "Behavior is dependent upon ideals and inspiration as well as upon factual knowledge and intellectual understanding." Here is his philosophy of sex education and its purposes: "That our people should grow up learning the appropriate facts in the best possible way; that their general attitude to sex should be a completely healthy one; that they should draw up for themselves a code of conduct after careful consideration of all the issues involved and should endeavor to behave according to this rationally determined code; and that they should react to the behavior of others with sympathy, tolerance and charity, but without spineless acquiescence in a code inferior to their own."

Bibby places much stress on the belief that children need not be forced but should be introduced to knowledge as fast as they are ready for it; this procedure is generally accepted in the United States and has been well set forth by Swift.[2] His views on the teaching of facts relating to courtship and marriage are also along the general lines accepted in the United States and embodied in such standard works as those of Frances Bruce Strain [3] as well as by numerous other writers, including Rice,[4] Dickerson [5] and Hutton.[6]

Attention is called to the absence of qualified teaching personnel and the necessity for training youth leaders. In closing, Bibby calls for research as a basis of sex education and particularly for a greater amount and degree of accuracy in our conception of the sex knowledge of the people we are trying to educate and of the relative efficiencies of the various technics in sex education. Lastly, he believes that "our scheme of sex education must not be drawn up in vacuo, as if sex attitudes and sex behavior were things fixed and immutable. If it is to be really potent, it must be sex education for our particular social setting." Britain, it would appear, faces precisely the same problems in sex education as does the United States and faces them in just about the same manner.

1. Bibby, Cyril: Sex Education: Aims, Possibilities and Plans, Nature **156**: 412 (Oct. 6), 438 (Oct. 13) 1945.
2. Swift, Edith Hale: Step By Step in Sex Education, New York, Macmillan Company, 1938.
3. Strain, Frances Bruce: Being Born, New York, D. Appleton-Century Company, 1936; Strain, Frances Bruce: Love at the Threshold, New York, D. Appleton-Century Company, 1942.
4. Rice, Thurman, B.: The Age of Romance, Chicago, American Medical Association.
5. Dickerson, Roy E.: So Youth May Know, New York, Association Press, 1932; Dickerson, Roy E.: Growing into Manhood, New York, Association Press, 1933.
6. Hutton, Isabel G.: The Sex Technique in Marriage, New York, Emerson Books, Inc., 1936.

PRESIDENT TRUMAN SIGNS NEW VETERANS LEGISLATION

On January 3 President Truman signed the bill creating a department of medicine and surgery in the Veterans Administration which was analyzed in THE JOURNAL of January 5, page 38. On the same day representatives of the Veterans Administration and of various organizations interested in the care of the veterans appeared for a conference with the President, the chief point at issue being the determination as to whether or not preference could be given in the selection of medical personnel to men who had had military service. So seriously did President Truman consider this factor that he addressed a letter specifically to General Bradley urging that such preference be given. As might have been expected, representatives of the Civil Service were opposed to the appointment of physicians in higher grades without regard to Civil Service, but General Bradley emphasized the importance of such exceptions if the Veterans Administration is to be supplied with the physicians necessary to carry on its work. Major Gen. Paul R. Hawley was immediately appointed Acting Surgeon General in accordance with the new legislation.

For the first time it will be possible in the administration of medical care to veterans to utilize the services of highly qualified physicians and surgeons and to establish an organization with top ranking specialists in each medical field. The administrator will himself prescribe the qualifications necessary for appointment as a physician, dentist or nurse and this without regard to Civil Service requirements.

The new legislation, with minor modifications, was endorsed by representatives of the medical profession, including official representatives of the American Medical Association.

It is hoped that civilian physicians will do their utmost to make the Veterans Administration effective in rendering a high quality of medical service. For the first time the medical institutions of the administration will become qualified teaching institutions with residencies in the various specialties, thus becoming fully integrated with the system of medical care which has brought medical service of the United States to the highest level available anywhere in the world.

GENERAL PARRAN ADDRESSES HIS OFFICERS

Officers of the United States Public Health Service, including apparently all reserve officers and those who hold appointments in the emergency hospital units that were established during the war, received last week a mimeographed letter, dated December 10, which created amazement and consternation. Here follows this communication:

To: All officers of the Public Health Service
Subject: The National Health Program

Enclosed is a copy of House Document No. 380, which is the full text of President Truman's message to the Congress on a national health program, a subject of the highest importance to every citizen. The message contains a comprehensive analysis of the health problems of the country and recommendations as to the pattern of legislation to deal with them.

It is a source of particular satisfaction to all of us who labor for the public health advancement that this should be the special subject of a Presidential message. For the first time we have the major elements of a national health policy officially stated in comprehensive terms. This has been a goal of all public health workers for many years, and the enunciation of such a policy by the Chief Executive gives the Public Health Service definite objectives for its future work.

On the same day as the message was delivered Senator Wagner introduced (for himself and Mr. Murray) S. 1606, and Representative Dingell introduced H. R. 4730, designed to implement the proposals of the President. In addition, several bills are pending in the Congress dealing with special phases of the President's legislative program. These include the hospital construction bills, the national mental health bills and the stream pollution bills, each of which would impose substantial additional responsibilities on the Public Health Service.

The appropriate executive agencies of the government have been specifically instructed by the President to assist in carrying out his legislative program as presented to the Congress on September 6. The President wrote to the administrator of the Federal Security Agency on October 4 requesting him "to take primary responsibility for legislative measures necessary to carry out the part of my message (Sept. 6, 1945) outlined in section 21 concerning a national health program to provide adequate medical care for all Americans and to protect them from financial loss and hardship resulting from illness and accident."

Every officer of the Public Health Service will wish to familiarize himself with the President's message and will be guided by its provisions when making any public statement likely to be interpreted as representing the official views of the Public Health Service.

THOMAS PARRAN, Surgeon General.

If the fourth and fifth paragraphs of this letter say what they seem to say, the President of the United States has instructed the executive agencies of the government to get behind his legislative program for the extension of health. The Surgeon General of the U. S. Public Health Service goes into action, ties the Wagner-Murray-Dingell bill right into the program and at least hints to his officers that they had better be careful about making any public statements with regard to the message.

Many of those addressed in this instance are physicians in the private practice of medicine in the United States. They volunteered their services in the formation of hospital units to aid the people of this country in an emergency; they continued their membership in the Reserve of the Public Health Service after the war itself ended because it seemed to be desirable to have an emergency service available. If, however, men are to be directed in their thinking or muzzled in their speaking incident to their desire to be of service to the health of the nation, their rights as American citizens will have to prevail. Reserve officers will have to consider seriously whether or not they wish to maintain any official connection with such a federal agency. Incidentally, it might have been better if General Parran had, in these final two paragraphs, said in shorter and clearer sentences exactly what he meant to convey.

Current Comment

AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY

In October 1920 appeared the first issue of the *American Journal of Obstetrics and Gynecology*, successor to a periodical founded in 1868 as the *American Journal of Obstetrics and Diseases of Women and Children*. The issue for December 1945 marks the twenty-fifth anniversary of the new publication. During all of this period it has been under the editorship of Dr. George W. Kosmak, who marks the twenty-fifth anniversary by an editorial which indicates some of the tremendous progress that has been made in the field over that period:

Knowledge of the physiology of reproduction has advanced greatly, with the attainment in particular of a knowledge of the role of the endocrines, the morphologic development of the embryo and the control of uterine contractility. Gynecologic and obstetric pathology has become an essential part of the personal knowledge of each practitioner of the specialty. The widespread use of blood and plasma has completely altered the outlook in major surgical operations and in obstetric hemorrhage. The sulfonamides and penicillin have revolutionized the treatment of infections. Radiation has been further developed in the treatment of cancer. Finally, the enlistment of the efforts of the practitioner of obstetrics in a great cooperative study has produced a phenomenal improvement in obstetric mortality and morbidity.

Of interest is the fact that the mechanical phases of gynecologic treatment show little change, while the development of medical and physical methods of therapy and diagnosis has assumed such great prominence. While operative technics have been developed and expanded, the scalpel today is less in evidence than the test tube and the experimental or the research laboratory.

Attention is called also to the extent to which governmental funds are now being used for the extension of maternal and infant care. Dr. Kosmak points out that "It is understandable that the fields of obstetric and pediatric practice should be the first to receive such attention" because of the sentimental factors involved; these special fields may, however, serve simply as experimental areas and thus be the forerunner of the extension of government activity in other branches of medicine. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION tenders to the *American Journal of Obstetrics and Gynecology* warm congratulations on twenty-five years of excellent service to the advancement of obstetrics and gynecology.

MEDICINE AND THE WAR

NAVY

PROGRAM FOR TRAINING OF SPECIALISTS

Vice Admiral Ross T. McIntire, chief of the Bureau of Medicine and Surgery, recently announced the establishment of a long term program for the training of specialists, involving the designation of nine large naval hospitals as special centers of instruction. The program will make available to medical officers a complete term of specialization training comparable to the best obtainable in civil life. All of the recognized specialties will be taught, including anesthesiology, dermatology and syphilology, internal medicine, neurosurgery, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, pathology, pediatrics, plastic surgery, psychiatry and neurology, radiology, surgery and urology. The nine postgraduate teaching centers will be set up at the naval hospitals at Chelsea, Mass., St. Albans, N. Y., Philadelphia, Bethesda, Md., Great Lakes, Ill., San Diego, Long Beach and Oakland, Calif., and Seattle.

The board of honorary consultants to the Medical Department of the Navy who have actively cooperated in the formulation of the plans and who will assist in their development, are:

Dr. Donald C. Balfour, director of the Mayo Foundation and Clinic, Rochester, Minn.

Dr. Richard B. Cattell, chief of the surgical section, Lahey Clinic, Boston.

Dr. Edwin J. Cohn, department of physical chemistry, Harvard Medical School, Boston.

Dr. Frank P. Corrigan, American ambassador to Venezuela.

Dr. Walter E. Dandy, professor of neurosurgery, Johns Hopkins University Hospital, Baltimore.

Dr. Frank H. Lahey, director of the Lahey Clinic, Boston.

Dr. Oswald S. Lowsley, director of the department of urology, James Buchanan Brady Foundation, New York.

Dr. James E. Paullin, professor of clinical medicine, Emory University School of Medicine, Atlanta, Ga.

Dr. W. Calhoun Stirling, urologist, Washington, D. C.

Dr. Edward A. Strecker, professor of psychiatry, University of Pennsylvania School of Medicine, Philadelphia.

Dr. Meyer Wiener, professor of ophthalmology, Washington University, St. Louis.

Instructors will include not only the regular staffs of the nine special training centers but also members of the Naval Reserve Medical Corps who are prominent in their various fields of medicine and surgery. Present plans call for a definite period of training for the young doctor who enters the Navy on his graduation from medical school. This period would cover one year's internship, one or more years of residency training, two years of sea or foreign shore duty and a definite period of intensive work in this country in that field of medicine which the officer has chosen and which has been approved by the central advisory group.

Internships and residency training will continue to be given at all naval hospitals which are properly accredited, with the more advanced teaching being offered at the nine specialization centers.

NAVAL MEDICAL OFFICERS PRESENTED WELLCOME AWARD

The Wellcome Award, established by the late Sir Henry Wellcome, was recently presented to naval personnel for the sixth consecutive year. Joint recipients of the award were Capt. Joseph S. Barr (MC), U.S.N.R., Newton Center, Mass.; Capt. R. H. Draeger (MC), U.S.N., San Francisco, and Comdr. W. Warren Sager (MC), U.S.N.R., Washington, D. C., for their paper "Solid Blast Personnel Injury," which was selected by the Association of Military Surgeons as the best submitted in the annual competition. The presentation of the honorarium and scroll accompanying the award was made by Capt. Robert E. Duncan (MC), U.S.N., medical officer in command at Bethesda. A gold medal also normally goes to the winner, but the medal has not been cast since the beginning of the war, the die having been destroyed in the London blitz.

Captain Barr is in charge of the orthopedic service at Bethesda, and Captain Draeger is executive officer of the Naval Medical Research Institute. Commander Sager, now on terminal leave, formerly was attached to the surgical staff at Bethesda.

NAVY AWARDS AND COMMENDATIONS

Captain Raymond Webster Hege

A Gold Star in lieu of a second Bronze Star was posthumously awarded to Capt. Raymond Webster Hege, Washington, D. C. The citation accompanying the award was "for meritorious achievement as force medical officer attached to the staff of the commander, First Carrier Task Force, embarked on the U. S. S. *Bunker Hill*, in connection with operations against enemy Japanese forces in the Pacific War Area from Dec. 20, 1944 to May 11, 1945. Responsible for the health and well being of the officers and men of his task force, Captain Hege personally attended the staff and flag allowance personnel on board the *Bunker Hill*, maintaining them at peak of battle efficiency during extended operations against the Japanese Empire, which included the first Tokyo raids, the support of landings on Iwo Jima, strikes against Kyushu and the Kure naval base, support of the Okinawa landings and an engagement with major units of the Japanese fleet on April 7, 1945. Directing all activities under his control with dependable judgment and resource, he worked tirelessly and with brilliant initiative, constantly improving the standards of health within the force and, by his thorough understanding of the peculiar mental and physical needs of men functioning under the strain of continuous combat, skilfully insured the sound health of all force personnel during a prolonged period of intensive operations. By his outstanding professional ability, cool courage and gallant acceptance of extreme danger and hardship, Captain Hege served as an inspiration to all on board the *Bunker Hill*, and his resolute conduct throughout upheld the highest traditions of the United States Naval Service." Dr. Hege graduated from the University of Cincinnati College of Medicine in 1927 and entered the service June 15, 1926. He was killed in action May 11, 1945.

Captain Charles L. McCarthy

A letter of commendation was recently presented to Capt. Charles L. McCarthy, formerly of Washington, D. C., which read as follows:

"Through the courtesy of the Bureau of Medicine and Surgery, U. S. Navy, Capt. Charles L. McCarthy (MC), U.S.N.R., was made available to the Surgeon General's Office, U. S. Army, for work with the Combined Intelligence Objectives Subcommittee. Captain McCarthy was subsequently attached to the Medical Intelligence Branch of the Office of the Chief Surgeon, ETOUSA, to carry out the mission assigned.

"Captain McCarthy's wide general knowledge in the field of medicine and related subjects, and his fluent command of German made his service invaluable to the Combined Intelligence Objectives Subcommittee group. He was placed in charge of the advance section of the Medical Intelligence Branch and thus directed much of the field work carried out, especially that part dealing with uncovering and exploiting targets of opportunity. In addition, he took an active part in the actual investigations.

"Captain McCarthy demonstrated unusual ability and energy and was tireless in his efforts to seek out information. His congeniality and spirit of cooperation enabled him to work well with all the Army personnel with whom he came in contact. It is the desire of this office to express appreciation

to Captain McCarthy for his excellent services, and to the Bureau of Medicine and Surgery for making him available for this work."

Dr. McCarthy graduated from Johns Hopkins University School of Medicine, Baltimore, in 1916 and entered the service June 6, 1942.

Lieutenant Commander George William Fox

The Navy Cross was posthumously awarded to Lieut. Comdr. George William Fox, Milwaukee, "for extraordinary heroism as medical officer attached to the U. S. S. *Franklin* following an attack by enemy aircraft near Kobe, March 19, 1945. When his ship was turned into an inferno by an enemy air attack which started violent explosions and raging fires on board, Lieutenant Commander Fox unhesitatingly remained at his battle station in the below-decks sick bay and, despite the penetration of terrific blasts and fumes, steadfastly continued to protect his patients and minister to casualties until he himself succumbed to the dense, suffocating smoke. Lieutenant Commander Fox's valiant and self-sacrificing efforts on behalf of others, his superb courage and unfaltering devotion to duty in the face of grave peril were in keeping with the highest traditions of the United States Naval Service. He gallantly gave his life for his country." Dr. Fox graduated from Rush Medical College, Chicago, in 1931 and entered the service Aug. 17, 1942.

VETERANS

PLANS FOR MEDICAL CARE IN MICHIGAN AND KANSAS

"Home town care of veterans" for service connected disabilities, with free choice of physician, will be offered as a standard practice through an agreement announced by representatives of the Veterans Administration and the Michigan State Medical Society. A similar agreement which would entitle veterans with service connected disabilities to local hospital care for many types of cases also is under consideration, according to representatives of the Michigan Hospital Association.

The agreement will permit veterans to receive treatment and care from local physicians and hospitals. In many cases it will make it unnecessary for veterans to leave families, friends and family physicians to go to veterans' institutions distant from their homes.

Physicians providing service to veterans will be reimbursed through the Blue Cross Plan-Michigan Medical Service, which is a nonprofit prepayment organization established by the medical profession. Michigan Hospital Service, a nonprofit prepayment plan operated by Michigan hospitals, would handle payment for local hospital care provided to veterans under the contemplated hospital portion of the program. In turn, the actual cost to the Michigan Medical Service and Michigan Hospital Service will be repaid by the Veterans Administration. These two organizations are the Blue Cross Plans of Michigan, and similar nonprofit plans are in operation nationally.

Participants in the announcement of the new program in Michigan included Dr. R. S. Morrish, president of the Michigan State Medical Society; Rev. Dr. John Ernst, president of the Michigan Hospital Association; Dr. Stanley W. Insley, president of the Wayne County Medical Society; Guy F. Palmer, Veterans Administrator for Michigan; R. R. L. Novy, president of Michigan Medical Service, and William J. Griffin, president of Michigan Hospital Service.

"The Michigan State Medical Society already has approved this program, but Michigan Medical Service still must hold meetings with physicians throughout the state to invite their individual participation in the program."

"The Michigan Hospital Association also has approved a proposal for local hospital care and it is hoped that an agreement covering this portion of the program will be ready in the near future."

In practice, the program will work much like that by which the Blue Cross now provides hospital and medical services to more than 1,250,000 residents of Michigan. For treatment or care necessitated by service connected disability, the veteran may go to any doctor participating in the program. If it is a case of the type provided by the veterans' program, the Blue Cross will immediately be authorized to make payment for care. Veterans Administration offices will be opened near the Blue Cross headquarters in Detroit so that authorization of payments will not be delayed. Special provisions are planned for veterans of the women's services. Since they cannot be accommodated at present in all veterans' hospitals, it is expected that they will be entitled to local care for both service connected and nonservice connected disabilities.

The schedule of fees which will be paid to doctors already has been approved by the Veterans Administration. This schedule was completed recently after prolonged study by a special committee of the Michigan State Medical Society. Hospitals would be paid the actual costs of providing service under the projected program for hospital care.

The inception of the new veterans' medical and hospital service program occurred at a conference between representatives of Michigan veterans' organizations and of leaders of the Wayne County Medical Society under Dr. Insley some months ago. At this meeting it was suggested that the problem of providing care for veterans might readily be handled through the Blue Cross plans. Agreement on the principles to govern the proposed arrangement was worked out in subsequent meetings with General Bradley, General Hawley and other officials of the Veterans Administration, and details now are being completed.

Kansas

Dr. W. P. Callahan, president of the Kansas Medical Society, has made several trips to Washington conferring with Major Gen. Paul R. Hawley in an effort to come to an agreement with the Veterans Administration on ways in which the doctors of the Kansas Medical Society may provide some of the medical services for veterans of this state. On Friday December 7 Major General Hawley announced the completion of this program and as quickly as possible the plan will be placed in operation in Kansas. The veteran will be permitted to select a doctor of his own choice, who will give an examination to accompany an application for pension. The restriction on this selection rests only on geographic lines in that the veteran will select a doctor from the area in which he resides. According to the agreement with the Veterans Administration, physicians in Kansas may also give medical service, including surgery, for service connected disabilities under certain circumstances primarily if the nearest Veterans Administration hospital is filled. Also under the agreement is the provision that emergencies may be cared for in the community in which the veteran resides. Here again he will have selection of the doctor to do this work.

In return for this the Kansas Medical Society agrees to submit a list of names of doctors qualified to give general examinations and another list of doctors who are specialists in the various fields of medicine. These lists will be submitted to the Veterans Administration, which plans to set up offices near the Kansas Medical Society. Claims will be cleared through that office and then forwarded to the district office for payment. It is expected that this program will go into effect sometime during the month of January.

NATIONAL HOSPITAL FOR SPEECH DISORDERS

The National Hospital for Speech Disorders, New York, is under contract to the Veterans Administration to rehabilitate ex-servicemen with speech and voice disorders. The hospital is also on the list of approved institutions which veterans may attend under the educational provisions of the G. I. Bill of Rights. More than sixty veterans are already receiving treatment at the hospital. While the majority of the veteran-patients are stutterers, several suffer from aphasia caused by head wounds or from aphonia due to loss of the larynx.

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ARMY

INVESTIGATE RELEASE SITUATION OF DOCTORS AND DENTISTS

Lieut. Col. Bolling R. Powell Jr. of the Legislative and Liaison Division of the War Department General Staff, and Col. Durward G. Hall, chief of Personnel Service of the Surgeon General's Office, recently departed for Europe to make an exhaustive investigation of the release of army doctors and dentists. A similar investigation was recently completed in the Pacific area.

Colonel Powell and Colonel Hall will determine the medical and dental strength now necessary for each theater so that all surplus professional officers can be immediately shipped out and either be assigned to replace doctors who are eligible for release or returned to civilian life. Another phase of the study will be the determination of the number of hospital beds needed to meet present conditions in the European theaters with the idea of releasing unnecessary beds.

PAMPHLETS FOR PATIENTS WITH PSYCHONEUROSIS

Under the title "What's the Score . . . in a Case Like Mine?" the War Department has issued War Department Pamphlet 20-35, which is given to patients discharged for psychoneurosis. It is a simple statement as to various forms of psychoneurosis, full of inspiration and uplift, with sound advice as to how the discharged soldier shall proceed in civilian life. Copies are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at ten cents a copy.

NEW COURSE ON CARE OF ARTIFICIAL LIMBS

A new course of instruction in the repair and maintenance of artificial limbs was recently inaugurated at the Walter Reed General Hospital, Washington, D. C., for the purpose of teaching every amputee how to take care of his own prostheses. First suggested by Col. Leonard T. Peterson, the Army's director of research on prosthetics, the program will deal with model limbs and various technical devices and will instruct the amputees in the working and maintenance of their prostheses.

POSTGRADUATE COURSE OF AMERICAN COLLEGE OF PHYSICIANS

A session of the Postgraduate Course of the American College of Physicians was held recently at Barnes General Hospital, Vancouver, Wash., under the direction of Col. Charles K. Berle, commanding officer of Barnes General Hospital. Some of the subjects covered during the meeting were rheumatic fever here and overseas, clinical observation in intestinal infections, massive dosage of penicillin in the treatment of bacterial endocarditis and the roentgenologist and antral gastritis.

ARMY SPECIALIZED TRAINING PROGRAM TO BE LIQUIDATED

According to a recent announcement from the War Department, medical students now in the Army Specialized Training Program, which is undergoing gradual liquidation, will continue training through the current fiscal year, ending June 30, with the future of the program depending on requirements for medical officers, which will be reconsidered at that time.

INSPECTION TOUR OF PACIFIC MEDICAL INSTALLATIONS

An inspection of Medical Department installations in the Pacific is now being made by Brig. Gen. R. W. Bliss, Assistant Surgeon General, Brig. Gen. William C. Menninger, director of Neuropsychiatry Consultants Division, and Dr. Eli Ginzberg, director of Resources Analysis Division. The trip will include stops at Honolulu, Guam, Shanghai, Chungking and Tokyo.

MERITORIOUS SERVICE UNIT PLAQUE

The Meritorious Service Unit Plaque was recently awarded to the 1263d S. C. U. Mason General Hospital, Brentwood, L. I., N. Y. During the period Dec. 1, 1944 to May 31, 1945 this unit performed its duties in a superior manner and demonstrated outstanding devotion to duty. Its accomplishments in the care and disposition of mentally ill patients are considered a noteworthy contribution in the field of military hospitalization and evacuation. Only through enthusiastic and unselffish devotion to duty could such high standards of service be attained. The accomplishments of this unit reflect great credit on itself and the military service. The unit and each of its assigned members are authorized to wear the Meritorious Service Unit Badge.

MALARIA RELAPSE RATE DECLINING

A recent announcement by the Army Medical Department discloses that the hospital admission peak for malaria relapses in the United States was reached in February 1945 with a total of approximately 6,000 cases and has been steadily declining since that time. During 1943, when men began to return from tropical theaters of operations in increasing numbers, the total number of hospital admissions for malaria relapse reached 5,275. By 1944 it had jumped to almost five times that number, 28,150, and in the first six months of this year the total was 30,420.

RETURNS TO SURGEON GENERAL'S OFFICE

Lieut. Col. M. E. Randolph, chief of the eye, ear, nose and throat section at Valley Forge General Hospital, Phoenixville, Pa., was recently transferred to the Office of the Surgeon General, Washington, D. C., to serve as chief consultant in ophthalmology to the Surgeon General. Before being transferred to Valley Forge General Hospital, Colonel Randolph was chief of the ophthalmology branch of the Surgeon General's Office. He will be replaced by Lieut. Col. Phillips Thygeson.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Harold Lynn Wilson

The Legion of Merit was recently awarded to Lieut. Col. Harold Lynn Wilson, formerly of New York, "for exceptionally meritorious conduct in the performance of outstanding services as chief, surgical service, of the 11th Evacuation Hospital semimobile, from Aug. 15, 1944 to May 8, 1945." The citation continued "Lieutenant Colonel Wilson contributed immeasurably to the efficient operation of his unit in the care of battle casualties. Untiring in his efforts to improve constantly the service rendered to the wounded, his usual day was one of eighteen to twenty hours of constant activity during the active phase of combat. Under his supervision large numbers of battle casualties received rapid and efficient treatment. Lieutenant Colonel Wilson's services reflect highest credit on himself and the armed forces of the United States." Dr. Wilson graduated from Cornell University Medical College, New York, in 1927 and entered the service June 1, 1942.

Lieutenant Colonel Gaetano T. DeFusco

The Legion of Merit was recently awarded to Lieut. Col. Gaetano T. DeFusco, formerly of Jersey City, N. J., at present commanding officer of the 183d Station Hospital, Fort Richardson, Alaska, for the performance of exceptionally meritorious services. The citation accompanying the award stated that it was presented "for exceptionally meritorious conduct in the performance of outstanding services during the period May 20, 1943 to Oct. 20, 1945. As regimental surgeon, 78th Coast Artillery Regiment, commanding officer of two station hospitals in the Aleutian area and later as commanding officer, 183d Station Hospital, Fort Richardson, Lieutenant Colonel DeFusco exhibited the highest professional and military standards. In addition to the calm and efficient manner in which he performed

his many missions, his ability to perceive future problems, conditions and the initiative and skill to plan in advance and act accordingly was a credit to this command. Lieutenant Colonel DeFusco's personal interest and professional experience were responsible for the establishment of immediate health facilities and a modern dispensary in the town of Unalaska. As a result of his untiring efforts and industry, the medical care for all personnel both military and civilian was carried out in a progressive and exceptional manner. The high standards of efficiency in medical care achieved by the 183d Station Hospital is largely due to the judgment, unselfish energy and devotion to duty displayed by this officer. His high sense of duty and loyalty, combined with professional ability, reflect great credit on himself and the military service." Dr. DeFusco graduated from Georgetown University School of Medicine, Washington, D. C., in 1931 and entered the service in December 1940.

Captain John L. Cathie

Capt. John L. Cathie, formerly of Alexander, N. Y., was recently awarded the Bronze Star "for meritorious achievement in connection with military operations against the enemy at Arawe, New Britain, from Dec. 15, 1943 to March 1, 1944. During the arduous campaign which followed the assault landing on Arawe, Captain Cathie distinguished himself as a squadron medical officer by his outstanding devotion to duty in carrying out his assignment. The squadron aid station was established close to the front lines and he was often exposed to enemy small arms, machine gun and mortar fire while performing his duties. Faced with the problem of providing medical attention for large numbers of men and working under the handicap of a scarcity of medical equipment and supplies, he devoted himself so wholeheartedly to his task that expert treatment was given to troops at all times. Captain Cathie's enthusiasm, his consideration for the welfare of the sick and wounded and his willingness to undergo great physical hardships and personal danger were a priceless inspiration to all the officers and men to the unit in which he served." Dr. Cathie graduated from the University of Toronto Faculty of Medicine in 1937 and entered the service in August 1942.

Lieutenant Colonel John H. Mulholland

Lieut. Col. John H. Mulholland, formerly of New York, was recently awarded the Bronze Star "for meritorious service in connection with military operations as chief of surgical service, 1st General Hospital, European Theater of Operations, from Oct. 23, 1944 to May 1, 1945." The citation further stated that "Lieutenant Colonel Mulholland has given unstintingly of his time and skill, in the professional care of patients, always pursuing new and advanced methods of treatment and thus reducing the rate of mortality among battle casualties treated. As surgical consultant in the Seine section he imparted his knowledge to the surgical services of other hospitals, which resulted in the saving of hundreds of lives and early return to duty of thousands of patients." Dr. Mulholland graduated from New York University College of Medicine, New York, in 1925 and entered the service Oct. 18, 1942.

Captain William M. McConahey Jr.

The Silver Star was recently awarded to Capt. William M. McConahey Jr., formerly of Coshocton, Ohio. The citation accompanying the award called attention to his gallantry on June 22, 1944 in the vicinity of Portbail, France: "When a litter squad of his detachment had failed twice in attempts to evacuate three critically wounded men from an area under heavy enemy mortar concentrations, Captan McConahey himself led the squad forward under the constant enemy barrage. As they approached the wounded men, an enemy machine gun opened fire on the group. Captain McConahey ignored the enemy fire and located and directed the evacuation of each of the three wounded in turn. The gallant example of Captain McConahey resulted directly in the saving of the life of at least one man. His courageous action over and above the call of duty was in accord with high military tradition." Dr. McConahey graduated from Harvard Medical School, Boston, in 1942 and entered the service July 16, 1943.

Captain Emil P. Zarsky

The Silver Star was recently awarded to Capt. Emil P. Zarsky, formerly of Refugio, Texas, "for gallantry in action on Nov. 18, 1944 in the vicinity of Leintrey, France. On notification that two men had been seriously wounded by stepping on a mine, Captain Zarsky, without regard for his personal safety, immediately proceeded fearlessly through the mine field to the scene of the accident. Fully aware of the danger involved, he forbade any one to accompany him, except one officer and one enlisted man. His bravery and unselfish devotion to duty reflect great credit on this officer and exemplify the finest traditions of the United States Army Medical Corps." Dr. Zarsky graduated from St. Louis University School of Medicine in 1929 and entered the service Sept. 22, 1942.

Colonel Claude S. Beck

The Legion of Merit was recently awarded to Col. Claude S. Beck, formerly of Cleveland. The citation stated that Colonel Beck "brought to the Army a wealth of background and training in surgery which he tirelessly imparted to the staffs of the army hospitals. By close and constant supervision over the personnel assigned to the surgical services of the command and over the procedure they carried out, he developed and maintained a high standard of treatment. He was alert and quick to put into use any worth while advances in surgical technic. By his energy, superior professional ability, broad vision and sound judgment, he made a material contribution to the war effort." Dr. Beck graduated from Johns Hopkins University School of Medicine, Baltimore, in 1921 and entered the service Oct. 10, 1942.

Major Julian A. Sterling

Major Julian A. Sterling, formerly of Philadelphia, was recently awarded the Bronze Star. According to the citation, "Major Sterling performed outstanding services in establishing the convalescent training program for this theater. His services included the editing, publishing and distribution of division brochures and the supervision of many convalescent hospital programs. Major Sterling has contributed in great measure to the morale and efficiency of the thousands of wounded soldiers returned to combat and assisted materially in the success of the important theater manpower conservation program." Dr. Sterling graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1936 and entered the service April 1, 1941.

Lieutenant Colonel John A. DePasquale

The Silver Oak Leaf was recently awarded to Lieut. Col. John A. DePasquale, formerly of Hartford, Conn. Lieutenant Colonel DePasquale served on Guadalcanal, the Russell Islands, Rendova and New George. At Rendova he performed operations out in the open, days before the first tents could be put up. Dr. DePasquale graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1936 and entered the service Feb. 24, 1941.

Colonel Guy W. Horsley

Col. Guy W. Horsley, Richmond, Va., was recently awarded the Legion of Merit. He was chief of the surgical service of the 45th General Hospital and the award made was for "exceptionally meritorious conduct in the performance of outstanding services." Dr. Horsley was especially cited for his devotion to duty "during the times of greatest stress immediately following the drive on Rome and the invasion of southern France." Dr. Horsley graduated from the University of Virginia Department of Medicine, Charlottesville, in 1929 and entered the service May 15, 1941.

Lieutenant Colonel Severio Charles Franco

The Bronze Star was recently awarded to Lieut. Col. Severio Charles Franco, formerly of Brooklyn, for "meritorious service in connection with military operations from July 31, 1944 to May 1, 1945." He commanded the Ninth Field Hospital, which was awarded the Meritorious Service Unit Plaque. Dr. Franco graduated from Long Island College of Medicine, Brooklyn, in 1931 and entered the service Sept. 18, 1942.

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Captain Seymour Hershman

Capt. Seymour Hershman, formerly of Chicago, was recently awarded the Bronze Star "for meritorious service in connection with military operations against an enemy of the United States during the period July 17, 1944 to April 28, 1945. Captain Hershman, serving as assistant to chief of surgical service, 109th Evacuation Hospital, distinguished himself by his outstanding performance of duty. The high degree of professional skill he displayed, his resourcefulness and loyal, untiring devotion to duty reflect great credit on himself and the military service." Dr. Hershman graduated from the Chicago Medical School in 1942 and entered the service Oct. 6, 1942.

Major Wesley B. Oliver

Major Wesley B. Oliver, formerly of Belvidere, Ill., was recently awarded the Bronze Star for a "display of fine administrative ability, indefatigable energy and tireless devotion to duty, all of which were of inestimable value in the prompt and efficient evacuation of Third Army casualties." Dr. Oliver graduated from Northwestern University Medical School, Chicago, in 1936 and entered the service Sept. 2, 1942.

Lieutenant Colonel William T. Holladay

The Legion of Merit was recently awarded Lieut. Col. William T. Holladay, formerly of Dixon, Ill., for "meritorious service and bravery, particularly in the 37th Division's campaign in Manila." Dr. Holladay graduated from Northwestern University Medical School, Chicago, in 1931 and entered the service March 15, 1941.

Major Samson D. Entin

Major Samson D. Entin, formerly of Chicago, was recently awarded the Bronze Star "for meritorious service with the 65th Infantry Division in France, Germany and Austria for the period March 5 to May 8, 1945." Dr. Entin graduated from Loyola University School of Medicine, Chicago, in 1936 and entered the service March 5, 1941.

Captain Martin M. May

Capt. Martin M. May, formerly of Marion, Ill., was recently awarded the Bronze Star and the Meritorious Service Unit Plaque. Dr. May graduated from St. Louis University School of Medicine in 1938 and entered the service Oct. 7, 1942.

MISCELLANEOUS

DIRECTORY OF APPROVED SURGICAL TRAINING PLANS

The American College of Surgeons recently published a 424 page directory in which are listed and described the approved programs of graduate training in surgery in 240 civilian hospitals in the United States and Canada and in 32 Naval, 7 Veterans Administration and 10 United States Public Health Service hospitals. The directory is chiefly an aid to medical officers returning from war duty and was made possible through the financial aid of a number of industrial organizations which have made contributions as a tribute to medical officers in the governmental services during the war.

UNRRA NEWS

Report on Work Done in Greece

Miss Rosamond Wansborough, an English nurse with special training in dietetics, recently returned from Greece after ten months of service as a nurse and dietitian in the mountainous areas of that country. In her report she states that only the UNRRA emergency food supplies saved thousands of lives and are giving the stricken villagers the heart to prepare for the coming winter. Last spring most people in these villages were scarcely strong enough to carry their own food from the warehouse to their homes. Many still suffer from apathy and depression as a result of prolonged starvation. UNRRA's food program is designed to bring the basic ration up to 2,000 calories a day for each person. Included for children are special rations of cod liver oil, powdered milk and soup. Infant mortality is now dropping, and children are beginning to resume normal growth.

Communicable Diseases in Europe

The principal communicable diseases threatening the present health of Europe, according to a summary of the epidemic situation on that continent made public recently by UNRRA in Epidemiological Information Bulletin No. 17, are typhus in the east, typhoid in both west and east and malaria in the Mediterranean area. Tuberculosis, diphtheria and syphilis are generally prevalent. Dysentery has been reported on the increase in a number of areas including Great Britain, and outbreaks of poliomyelitis have been noted in Belgium and Czechoslovakia.

Systematic control measures, especially the use of DDT to kill lice, have all but succeeded in eradicating epidemic typhus west of the Elbe-Adriatic line. In the eastern part of Europe the forced movements and resettlements of population now in progress are aggravating all problems of disease control. Malaria control too has been simplified by the use of DDT, but typhoid and dysentery will be harder to curtail.

The bulletin also advocates control measures to stop the spread of tuberculosis but is aware that this problem is tied up with "the slow nursing back to health of a war-torn continent." The issue also contains a survey of infant mortality in large towns and reports on the prevalence of plague, cholera, yellow fever, smallpox, relapsing fever and other communicable diseases throughout the world.

Diphtheria Still Leading Epidemic Disease

Diphtheria, which reached epidemic proportions in a large part of central and northern Europe in 1942 and 1943, continues to be the leading epidemic disease and is still increasing rapidly in both Finland and Germany. In the Netherlands diphtheria has become one of the chief causes of death, as far as infectious diseases are concerned, second only to tuberculosis. France, Czechoslovakia, Belgium and Austria continue to have high morbidity and mortality rates from diphtheria. Only in Norway has the diphtheria wave reached its peak and begun to subside. The United Kingdom and Hungary have been able to continue methods of immunization in use prior to the war and have a comparatively low number of diphtheria cases.

That the epidemic is not confined to the Western World is proved by reports of Japanese civilian officials to the Pacific Office of the Chief Surgeon, U. S. Army, which show that diphtheria is the most important epidemic disease in Japan. The Philippines also have a large number of cases.

Three Tons of DDT Released for Italy

Following an outbreak of bubonic plague at Taranto, Italy, where 23 cases were reported, UNRRA is dispatching by air from London two sanitation experts and a cargo of rat extermination materials in response to an appeal from Italian health authorities. All of the reported cases, 11 of which were fatal, were traced to a warehouse on the water-front of the Italian naval base.

UNRRA immediately released 3 tons of DDT for dusting the population of the area and killing the fleas which carry infection from rats to man. A truck to haul the equipment used for cyaniding ships in the port to kill the rats was also made available. The British Ministry of Food has lent McAuley Gracie, one of the two disinfestation experts reporting at Taranto, who will train Italian health officers in rat extermination. As a precaution against a further outbreak, plague vaccine to immunize 100,000 individuals is being sent from UNRRA's European office in England.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Ford, Henry G., Lt. Col., American National Bank, Gadsden.
Gelperin, Jules, Capt., 3809 12th Court South, Birmingham.
Glazer, Harry, Capt., 219 S. Hull St., Montgomery.
Moorman, John D., Major, 214 W. Holmes St., Huntsville.
Nethery, Sidney J. Jr., Major, Belle Mina.
Newburn, George W., Jr., Capt., T. C. I. Hosp., Fairfield.
Shelamer, Arthur M., Major, 202 N. Madison, Athens.
Thigpen, Francis M., Capt., 401 S. Court, Montgomery.

Arkansas

Kemp, Karlton H., Capt., 1124 Hickory St., Texarkana.
Maguire, Frank C., Capt., County Health Unit, Blytheville.

California

Ahlering, Joseph Jerome, 1st Lt., General Hospital, Fresno.
Cappeller, Wm. S., Capt., 789 Buena Vista Ave., San Francisco.
Comroe, Jules B., Major, 1050 Franklin St., San Francisco.
Custer, Lawrence R., Col., 909 Hyde St., San Francisco.
Garretson, Kirk D., Capt., 4119 Manila Ave., Oakland.
Gibbs, Gordon E., Capt., Thermal.
Haakinson, William H., 1st Lt., 1750 Park Ave., San Jose.
Jones, Floyd H., Major, 2603 E. Broadway, Long Beach.
Jones, Theodore C., Capt., 511 E. Manchester Blvd., Inglewood.
Joseph, Peter S., Capt., 1200 Washington St., San Francisco.
Koerper, Victor E., Capt., 3850 Montecito, Santa Rosa.
Leichter, Martin, Capt., 839 N. Poinsetta Pl., Los Angeles.
Loy, Monroe F., Major, 312 N. Boyle Ave., Los Angeles.
Miller, Albert G., Capt., 205 3d Ave., San Mateo.
Moulton, Rowland R., Major, 1032 LaCuesta, San Mateo.
O'Grady, W. E., Capt., 555 Buena Vista Ave., San Francisco.
Porter, Marshall E., Capt., Mendocino State Hosp., Talmage.
Powell, Forrest G., Capt., 620 W. Grove St., Visalia.
Spencer, John A., Capt., 1970 16th Ave., San Francisco.
Stark, Morris, Capt., 2416 Holly Ridge Dr., Hollywood.
Stewart, Harry B., Capt., 525 Nyrtle Ave., Modesto.
Yee, Jacob J., Lt. Col., 1531 W. St., Sacramento.

Colorado

Evans, Russell J., Lt. Col., 326 Colorado Blvd., Denver.
Krausnick, Keith F., Major, Yuma.
Lewin, Julian R., Major, 1282 St. Paul St., Denver.

Connecticut

Cotton, John M., Lt. Col., 200 Retreat Ave., Hartford.
Detora, Albert M., Capt., 657 High St., Middletown.
Hersey, Thomas F., Capt., 44 Park Ave., Hamden.
Krinsky, Charles, Capt., 951 Ocean Ave., New London.
Stankard, William F., Capt., 14 Cold Spring Rd., Stamford.
Voris, Jacques V., Capt., 132½ Main St., Norwalk.

Delaware

Ackart, Richard Jenks, Capt., "Rockmere," Wilmington.
Johnson, Wallace M., Major, 257 Main St., Newark.

District of Columbia

Finnegan, John F., Capt., 1342 E. Capital St., Washington.
Grennan, Henry A., Lt. Col., 4000 Cathedral Ave., Washington.
Kauffman, Julius, Capt., 818 Gallatin St., N.W., Washington.
Tumulty, Philip A., Capt., 4955 Glenbrook Rd., Washington.

Florida

Hanks, George W., Major, 5708 2nd Ave., N., St. Petersburg.
McKenzie, Jack A., Major, 701 Huntington Bldg., Miami.
Marks, Bert W., Capt., 1619 Jefferson Ave., Miami Beach.
Strumpf, I. J., Lt. Col., 1360 Morvenwood Rd., Jacksonville.

Georgia

Beard, Donald Edwin, Major, RFD No. 1, Smyrna.
Candler, Robert W., Lt. Col., 2498 Montview Dr., N.W. Atlanta.
Clements, Claude A., Capt., La Fayette.
Roper, C. James, Capt., Roper Hospital, Jasper.
Sherman, John H., Lt. Col., 2350 McDowell St., Augusta.
Stewart, Philip R., Major, 406 Walton St., Monroe.
Victor, Samuel, Capt., A. C. L. Hospital, Box 158, Waycross.

Illinois

Ablaza, Avelino Enriquez, Capt., 9054 S. Jefferson Ave., Chicago.
Ahern, Thomas Francis, Capt., 8223 Luella Ave., Chicago.
Brott, Everel W., Major, Lena.
Banata, Emil J., Major, 1810 S. Clarence Ave., Berwyn.
Dunn, Marion F., Capt., Hinsdale Sanit., Hinsdale.

Illinois—Continued

Feinhandler, Harold S., Capt., 3156 W. Diversey Ave., Chicago.
Gunther, Aaron, Major, 3403 Lawrence Ave., Chicago.
Hamlin, Courtney N., Major, 1364 Brown Hills Rd., Rockford.
Jacobs, Henry J., Major, 218 E. Minn St., Spring Valley.
Jacobson, Herman A., Col., 2641 Carmen Ave., Chicago.
Malbin, Barney, Major, 5527 S. Dorchester Ave., Chicago.
Martin, John, Major, 303 E., Superior St., Chicago.
Meagher, George B., Capt., DePue.
Pallasch, Gervaise P., 1st Lt., 3016 Logan Blvd., Chicago.
Parker, Francis W. Jr., 1st Lt., 303 E. Superior St., Chicago.
Pellettieri, Nino M., Capt., 5137 W. Crystal St., Chicago.
Restivo, Jack L., Capt., 3058 W. Harrison, Chicago.
Richards, Francis L., Capt., Price Sanitarium Bldg., Springfield.
Rosenberg, Nathan, 1st Lt., 656 Wrightwood Ave., Chicago.
Schiff, Charles A., Capt., Michael Reese Hospital, Chicago.
Sinow, Sidney A., Capt., 302 E. South St., Clinton.
Stein, Philip J., Lt. Col., 7300 S. Shore Dr., Chicago.
Wolff, Luther H., 1st Lt., 215 N. Sheridan Rd., Waukegan.

Indiana

Abell, Charles Frederick, Capt., 420 W. 4th St., Marion.
Bailey, Edwin Blackwell, Capt., 560 A. St., N.E. Linton.
Boling, R. L., Capt., 4450 Marcy Lane, Apt. 120, Indianapolis.
Chambers, Leroy B., Capt., 800 N. Columbia St., Union City.
Cook, Charles E., Capt., 112 N. Market St., North Manchester.
Davidson, Wm. D., Major, 3115 E. Blackford Ave., Evansville.
Durkee, Mervin, Lt. Col., 102 E. Virginia St., Evansville.
Fisher, John E., 1st Lt., Clarksburg.
Hill, Kenneth G., Major, 201 E. 33rd St., Indianapolis.
Johnson, Robert B., Major, Muscatatuck Colony, Butlerville.
Kwitny, I. J., Lt. Col., 2829 N. Pennsylvania Ave., Indianapolis.
McElroy, Robert S., Major, 704 W. State St., Princeton.
Manley, Charles N., Major, Rising Sun.
Miller, Carl G., Major, 457 Oakdale, Ft. Wayne.
Nugen, Harold, Capt., 326 W. 7th St., Auburn.
Rossman, W. B., Capt., 1801 N. Kessler Blvd., Indianapolis.
Shuler, Lacey L., Major, 5868 Washington Blvd., Indianapolis.
Smith, William B., Major, 1125 Bradbury Ave., Indianapolis.
Steele, Dick J., Capt., 207 Northwood Blvd., Greencastle.
Wallace, H. C., Lt. Col., 107 W. Jefferson St., Crawfordsville.

Iowa

James, David W., Major, Kamrar.
Kiesau, Kenneth R., Capt., 208 Rossville Rd., Waukon.
Lister, Kenneth E., Major, Yocum Hospital, Chariton.
Missildine, Whitney H., Major, University Hospital, Iowa City.
Nachtwey, Robert A., Major, Lansing.
Niemann, Theodore V., Capt., Brooklyn.
Taylor, Wendel W., Major, Ireton.
Wall, David, Capt., 416 Franklin St., Ames.
Wolpert, Paul L., Capt., Onawa.
Wray, Robert M., Major, 402 25th St., S.E., Cedar Rapids.

Kansas

Polson, Robert C., Capt., 1129 Louisiana, Lawrence.
Jordan, Ralph E., Major, 503 Campbell, Beloit.
Melchert, Harold B., Major, 24 S. Mission, Council Grove.
Weinberg, Bernhard J., Capt., 1302 W. 4th Blvd., Coffeyville.
Wolohon, Harry C., Capt., Scammon.

Kentucky

Burks, James M., Capt., Leithfield.
Carr, Arch M., Capt., Alva.
Coe, George R., Capt., 118 Home, Erlanger.
Cohen, Robert, Major, 939 Eastern Pkwy. Louisville.
Foley, James D., Capt., Loyall.
Merlis, Jerome K., Capt., 101 W. Chestnut St., Louisville.
Schickel, Joseph, Capt., Burkesville.
Townsend, William M., Capt., Falmouth.
Wright, Thomas J., Capt., 1857 S. Limestone, Lexington.
York, Paul S., Major, Glasgow.

Maine

Brown, Freeman F. Jr., Capt., 5 Beech St., Rockland.
O'Sullivan, William B., Capt., 345 Maine St., Biddeford.

Mississippi

DeJarnette, Robert H., Capt., 1619 Filmore St., Corinth.
Hedmeg, Andrew, Major, 203 Gresham St., Indianola
Lunceford, William H., Capt., Slate Spring.
Ryan, Everett W., Lt. Col., Gulfport.

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PHYSICIANS SEPARATED FROM SERVICE

Missouri

Belot, Monti Louis, Jr., Capt., 630 Argyle Bldg., Kansas City.
Blache, Julian Owen, Capt., 4431 Evans Ave., St. Louis.
Cassidy, Leslie D., Lt. Col., 7410 Oxford Dr., Clayton.
Cook, Oliver W., Capt., Portageville.
Hamilton, Hugh G., Major, 1107 Bryant Bldg., Kansas City.
Hollingsworth, Robert S., Major, 1052 S. Delaware, Springfield.
Jordan, Raymond E., Capt., 4940 Forest Park, St. Louis.
Kohler, Louis H., Lt. Col., 5400 Arsenal St., St. Louis.
Lamar, Robert F., Major 3653 Charlotte St., Kansas City.
McDaniel, John R., Capt., 602 N. Francis St., Savannah.
Mulkey, James R., Major, 808 Dewey St., Farmington.
White, Charles H., Major, 1107 Bryant Bldg., Kansas City.
Zemsky, David W., Capt., 4330 A Lindell Blvd., St. Louis.

Nebraska

Anderson, James Burns, Col., 4903 Huntington Ave., Lincoln.
Morrow, Hamilton H., Capt., 406 E. 6th St., Fremont.
Munger, Horace V., Major, 2418 Calumet Ct., Lincoln.
Plechas, Nicholas P., Lt. Col., 5708 S. 38th St., Omaha.
Prescott, Kenneth E., Capt., Long Pine.
Wright, Glenn R., Capt., 606 S. 35th St., Omaha.

New Hampshire

Gifford, William H., Major, 105 Pleasant St., Concord.

New York

Ahrens, Arthur P., Capt., 101-66 118th St., Richmond Hill, L. I.
Albrecht, Henry Franz, Jr., Capt., 64 Second St., Troy.
Berkhausen, Bennett R., 1st. Lt., 46 Admiral Rd., Buffalo.
Bevilacqua, Michael, Major, 65-24 78th Ave., Glendale.
Cerrato, Anthony J., Capt., 942 E. 241st St., Bronx.
Cetta, Peter J., Capt., 874 Kent Ave., Brooklyn.
D'Avanzo, Charles S., Capt., 4115 50 Ave., Long Island City.
D'Aversa, Generoso, Capt., 1323 75th St., Brooklyn.
DiMarco, Vincent J., Capt., 306 Virginia St., Buffalo.
Downs, Wilbur G., Major, 11 Kiwassa Road, Saranac Lake.
Emmi, Anthony J., Capt., 34-06 9th St., Long Island.
Esposito, John A., Capt., 104 Church St., Saratoga.
Feraru, Felix, Capt., 154 President St., Lynbrook.
Field, Leonard E., Major, 576 Eastern Parkway, Brooklyn.
Giganti, Biagio C., Capt., 220 Weirfield St., Brooklyn.
Gilfillan, Rutherford S., Major, 508 W. Delevan Ave., Buffalo.
Glick, Louis J., Major, 68 Parcot Ave., New Rochelle.
Grinnell, Robert S., Major, 1170 5th Ave., New York.
Hayes, John G., Major, 20 Clarendon Road, Albany.
Heeks, William G., Lt. Col., 115 E. 90th St., New York.
Henkin, William A., Capt., 707 Willoughby Ave., Brooklyn.
Kant, Emanuel R., Capt., 610 8th Ave., New York.
Kantor, Samuel, Major, 544 Madison Ave., Albany.
Kaplan, Saul R., Capt., 47 Kew Gardens Rd., Kew Gardens.
Lamb, Thomas M., Major, 562 4th St., Brooklyn.
LeFever, Kenneth H., Major, 54 Pearl St., Kingston.
Lehman, Ernest, Major, 1577 51st St., Brooklyn.
Levin, Louis Major, 106 E. 96th St., Brooklyn.
McFarlin, Raymond T., Major, 455 E. 143 St., Bronx.
Maroon, Sam Z., Major, 100 Broadway, Kingston.
Marquith, Leo, Capt., 57 E. 88th St., New York.
Nachamie, Irving, Major, 125 Maple St., Brooklyn.
Nadvorney, Leo, 1st Lt., 1740 Grand Ave., Bronx.
Naumoff, Joseph H., Major, 1060 Crane St., Schenectady.
Patterson, Barnard D., Major, 9464 220th St., Queens Village.
Pellman, Louis, Capt., 3019 Avenue U, Brooklyn.
Pernice, Salvatore L., Capt., 8605 Bay 16th St, Brooklyn.
Perrone, Hector, Capt., 58 W. 9th St., New York.
Pilz, William A., Capt., 6336 60th Pl., Ridgewood, L. I.
Price, Robert M., 1st Lt., Main St., Clifton Springs.
Rapoport, Morris R., Capt., 2320 Grand Concourse, New York.
Reardon, James J., Capt., 132 Court St., Plattsburg.
Schofield, Oscar, Capt., 2241 E. 7th St., Brooklyn.
Schreiber, Sidney J., Capt., 42 Avenue D, New York.
Schwartz, Frederick, Major, 465 Empire Blvd., Brooklyn.
Schwarz, William A., Capt., 57 Broad St., Stapleton, S.I.
Shulack, Norman R., Major, 1824 Ocean Pkwy, Brooklyn.
Sisman, Irving E., 1st Lt., 3172 Rochambeau Ave., New York.
Smith, Stuart B., Capt., 3 Grant St., Pleasantville.
Snyder, John C., Lt. Col., 66th & York Ave., New York.
Weinstein, Israel, Major, 353 W. 56th St., New York.
Whitbeck, Carl G., Major, 439 Union St., Hudson.
Winkley, John H., Capt., Bellevue Hospital, New York.
Wycoff, Joseph W., Capt., 95 Old Country Rd., Hicksville.
Wylie, Robert H., Major, 17 Henderson Pl., New York.
Yellen, Hiram S., Col., 237 Linwood Ave., Buffalo.
Yellen, Irving, Capt., 237 Linwood Ave., Buffalo.

North Carolina

Barnes, Henry Eugene, Capt., Richard Baker Hosp., Hickory.
Byrd, Charles W., Capt., Bunnlevel.
Harris, Jerome S., Major, Duke Hospital, Durham.
Poole, Marvin B., Capt., 500 S. Layton Ave., Dunn.
Washburn, Chivous Y., Capt., Mooresboro.

North Dakota

Greengard, Milton, Capt., Rolla.
Kaylor, Coy C., Major, St. Johns Hospital, Fargo.

Oklahoma

Houston, Evan G., 1st Lt., 900 N. W. 13th St., Oklahoma City.
Levick, Julius E., Capt., 916 W. Second St., Elk City.
Mercer, J. W., Major, 1322 Indian Dr., Enid.
Ragan, Tillman A., Lt. Col., 1213 Iowa, Chickasha.
Word, Lee B., Major, 315 Union Nat. Bank Bldg., Bartlesville.

Oregon

Espersen, Ruben W., Lt. Col., Klamath Falls.
Montgomery, T. R., Major, 12714 Iron Mount. Blvd., Portland.
Sharp, Paul W., Lt. Col., Klamath Med. Clin. Klamath Falls.
Sunquist, Everett L., Major, Springfield.

Pennsylvania

Arons, Leonard Maxwell, Capt., 5604 Penn Ave., Pittsburgh.
Beckley, Edward C. Major, 122 E. Green St., Nanticoke.
Bonner, Francis J., Capt., 125 Argyle Rd., Ardmore.
Frick, John H., Capt., 34 N. Keesey St., York.
Gaev, Samuel D., Major, 257 S. 5th St., Philadelphia.
Garvin, Luke D., Capt., 757 E. Main St., Bradford.
Gearhart, Lyster M., Capt., 1540 Walnut St., Allentown.
Hegarty, Francis A., Major, 124 S. Pasadena Drive, Pittsburgh.
Levison, David J., Capt., 5518 Darlington Rd., Pittsburgh.
Liska, John R., Major, RFD 3, Box 222, Greensburg.
Meredith, Thomas N., Capt., 5800 Hampton St., Pittsburgh.
McElroy, Walter D., Major, 1408 Evans St., McKeesport.
Ross, Joseph V., Capt., 102 Market, Berwick.
Schaefer, William C., Capt., 2337 Walton Ave., Pittsburgh.
Schornick, James C., Capt., Hosp. of the U. of Pa., Philadelphia.
Steffa, Peter L., 1st Lt., 1644 N. 3d St., Philadelphia.
Stegura, Frank H., Capt., 62 E. Main St., Glen Lyon.
Weaver, Thomas D. L., Capt., 119 Teece Ave., Bellevue.
Weber, John M., Major, 1317 Denniston Ave., Pittsburgh.
Whitaker, John C., Capt., 24 H. Hickory St., Mount Carmel.
Woldow, Irving, Major, 5224 Woodbine Ave., Philadelphia.

Rhode Island

Freedman, Stanley S., Capt., 63 Lenox Ave., Providence.
Haverly, Richard E., Major, 341 Cole Ave., Providence.
Webster, Frederick A., Capt., 70 Greenwood Ave., Rumford.

South Carolina

Cousar, John Bradley, Lt. Col., Box 45, Bishopville.
Fouche, Heyward H., Capt., 906 Barnwell St., Columbia.
O'Hear, James, Jr., Major, 11 Franklin St., Charleston.

Tennessee

Amos, Hugh, Capt., 1110 Birdsall, Old Hickory.
Anderson, James Percival, Capt., Clifton Lane, Nashville.
Biles, James David, Jr., Major, 1442 Goodbar Ave., Memphis.
Bryan, Malvern T., Capt., 244 N. Garland St., Memphis.
Christian, Henry S., Major, 506 Emoriland Blvd., Knoxville.
Fowler, Shelton F., Capt., 627 Woodland St., Nashville.
Gayden, Lewis R., Major, Hampton Ave., Nashville.
Higginbotham, John M., Capt., Route 10, Alsie Dr., Knoxville.
Johnson, Joseph W., Jr., Major, Lookout Mountain.
Miller, James B., Major, 707 Dunington St., Columbia.
Murphey, F. B., Jr., Capt., 806 N. Chamberlain Ave., Chattanooga.
Newman, Robert W., Major, 334 McLemore Ave., Memphis.
Raines, Samuel L., Major, 695 S. McLean, Memphis.
Raulston, Joseph L. Jr., Major, Fountain City, Knoxville.
Rippy, Elkin L., Lt. Col., 1915 Church St., Nashville.
Robertson, Robert C., Col., 109 Hilldale Dr., Chattanooga.
Warr, Otis S., Jr., Major, 225 S. Belvedere Blvd., Memphis.
Wilson, Paul W., Capt., Dresden.

Utah

Benson, Leo Walter, Capt., 1435 25th St., Ogden.

Vermont

French, Edward B., Capt., Main St., Hyde Park.
Smith, Gordan B., Capt., Highland Ave., Rutland.
Smolinski, Frank J., Major, 102 Main St., West Rutland.

Wisconsin

Brock, Clayton E., Major, 309 Oak St., Stevens Point.
Buscaglia, Anthony T., Capt., 1266 N. 85th St., Wauwatosa.
Cole, David F., Capt., 317 Watson St., Ripon.
Hoyer, Edward C., Capt., 110 James St., Beaver Dam.
Hull, Harmon H., Capt., Brandon.
Johnson, Chester T., Capt., DeForest.
Jones, Richard H., Lt. Col., 307 Spaulding Ave., Ripon.
Limberg, Philip W., Capt., 123 South St., Plymouth.
Martineau, John E., Capt., Elkhart Lake.
Perry, Edward L., Capt., Sturgeon Bay.
Peters, Bruno J., Major, 7933 Stickney Ave., Wauwatosa.
Seifert, Kenneth A., Capt., 522 W. 2d St., Ashland.
Shulman, Herbert, Capt., 612 Howard Pl., Madison.
Skogmo, B. R., Capt., Milwaukee Child. Hos., Milwaukee.
Settlage, Henry A., Capt., Lone Rock.
Seward, Lynn J., Capt., 553 Liberty St., Berlin.
Weinshel, Leo R., Major, 2508 E. Belleview Pl., Milwaukee.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

California

Bailey, Byron G.....San Diego
Balyeat, Frederick S.....Los Angeles
Barnum, Glenn L.....Pasadena
Bonar, Perry A.....San Francisco
Bower, Albert G.....San Fernando
Bradford, Fred E.....Los Angeles
Burkhard, William G.....San Francisco
Butler, Oliver W.....Los Angeles
Cameron, Lawrence C.....Santa Ana
Chamlee, William F.....Hanford
Coleman, Denver D.....Alhambra
Cooper, Charles E.....San Francisco
Deffinger, William S.....Oakland
Drew, John F.....San Francisco
Dyke, Louis H., Jr.....Berkeley
Falconer, Fay H.....Los Angeles
Fetter, Edgar M.....San Diego
Findlay, Henry V.....Santa Barbara
Folsom, Clarence H.....San Marino
Foote, Frederick S.....San Francisco
Gay, LeRoy K.....San Francisco
Gaynor, Edmund P.....San Francisco
Gernand, Henry C.....Los Angeles
Gilman, Philip K. Jr.....San Francisco
Green, Marls C.....San Diego
Hankins, Franklin D.....Riverside
Harner, Clyde E.....Long Beach
Hillyer, Ernest C.....Long Beach
Hosmer, Matthew N.....San Francisco
Hoyt, Werner F.....Berkeley
Hurt, Laverne B.....San Diego
Irvine, George S.....San Leandro
James, Carvel M.....Beverly Hills
Kay, Jacob H.....Berkeley
Kelley, Edwin H.....San Diego
Knox, Stuart C.....Los Angeles
Koch, Peter L.....Sacramento
Konwaler, Benjamin E.....Vallejo
Kraft, George L.....Burbank
Lake, Thomas O.....Lafayette
Larson, Ernest E.....Los Angeles
Leland, John A. C., Jr.....Berkeley
Lester, David W.....San Diego
Loomis, Neal M.....Yuba City
Lucic, Lucas H.....La Jolla
Lymp, Leo J.....Hanford
Mackinnon, Donald G.....Exeter
McKenney, Philip W.....Alturas
McKinnon, Douglas D.....Los Angeles
McNamara, Delbert H...Santa Barbara
Macnie, John P.....Menlo Park
Maino, Charles R.....Modesto
Maloney, Harold P.....Piedmont
Miller, Charles D.....Glendale
Miller, John J., Jr.....San Francisco
Moore, Ferrall H.....Palto Alto
Mulligan, Harold R.....Los Angeles
Nelson, Roy F.....Peidmont
Nesche, George E.....Oakland
Noble, Thomas E.....Long Beach
Page, Warren E.....Greenfield
Toomey, Francis E.....San Diego
Von Briesen, Hans.....Los Angeles

California—Continued

Warrick, Floyd G.....Glendale
Werden, Delbert H.....San Diego
Weyrauch, Henry M.....San Francisco
Wiesinger, Warren E....San Francisco
Williams, David B.....Santa Rosa
Williams, Harry D. Jr..San Francisco

Illinois

Barber, Kent W.....Quincy
Barys, Harold J.....Chicago
Bergen, Samuel S.....Joliet
Boylan, Charles E.....Chicago
Boysen, Harry .....Chicago
Braun, Leonard L.....Chicago
Brown, Seth Edwin.....Evanston
Conklin, Charles A.....Normal
Dahlberg, Andrew V., Jr.....Chicago
Davis, William J. N., Jr.....Chicago
Duffy, Joseph E.....Joliet
Fischer, George G.....DuQuoin
Fruin, Leon T.....Normal
Green, Hyman S.....Chicago
Haraburda, Stanley V.....Chicago
Henegar, George C.....Harvey
Hogan, Richard J.....Chicago
Howe, Donnell C., Jr.....Chicago
Johnson, Ira W.....Noble
Kearns, John E., Jr.....Evanston
Loar, Ralph R.....Bloomington
McMahon, John V.....St. Charles
Mathis, John A.....Pinckneyville
Miller, James R.....Wilmette
Morrison, Thomas A.....Chicago
Nelson, Caryl Linder.....Sandwich
Rambar, Alvin C.....Chicago
Sculley, Jesse C.....Algonquin
Shapiro, Fred .....Chicago
Somerville, William .....Chicago
Stack, James K.....Chicago
Stewart, Frederick J.....Kewanee
Tarry, George William.....Chicago
Towner, Francis R.....Elgin
Trace, Herbert D.....Chicago
Tresley, Ira J.....Chicago
Vacin, Milo E.....Riverside

Missouri

Allen, Henry C.....Webster Groves
Allen, Horace E.....Columbia
Brown, Irwin S.....Kansas City
Bruner, Claude R.....Columbia
Chiarottino, Joseph F.....St. Joseph
Friedewald, Vincent E.....St. Louis
Higgins, Clinton K.....St. Louis
McGuire, William A.....St. Louis
Michael, Vernon E.....St. Louis
Millett, Henry S.....Kansas City
Penn, Lloyd L.....Troy
Simon, Jerome I.....St. Louis
Stuebner, Roland W.....St. Louis
Thompson, Frederick G. Jr....St. Joseph
White, Raymond N.....Springfield
Wimp, Jesse J.....Kirksville

New Jersey

Allen, Chester B. Jr.....Montclair
Connolly, Joseph P.....Clifton
Daly, Sylvester.....Bergen County
Denison, Ward C.....Ridgewood
Evans, David P.....Maplewood
Fenninger, Leonard D.....Princeton
Flax, Jacob L.....South Orange
Godfrey, Alan O.....Newman
Hill, Dean F.....Sussex
Ivory, Harry S.....Point Pleasand
Kelly, Francis T.....Westfield
Kohn, Ralph B.....Trenton
Medinets, Howard E.....Perth Amboy
Moore, Dean C.....E. Orange
Myers, Norman V.....Tenafly
Patti, Frank A.....Leonia
Pattyson, Ralph A.....Orange
Pratt, Gerald H.....Far Hills
Quirk, Martin Al.....Red Bank
Reich, Mortimer.....Newark
Rieman, Aloysius P.....Jersey City
Smalzried, Elmer W.....Orange
Smith, Charles H.....Glen Ridge
Stefansin, Frank.....North Bergen
Weiss, Abram .....Weehawken
White, Frank S.....Teaneck
Winslow, John .....Montclair
Wolfson, Harry .....Paterson

New York

Arbuse, David I.....New York
Austen, Willard E.....New York
Baum, Erwin C.....Brooklyn
Bullwinkel, Harry G.....Yonkers
Buxton, Charles L.....Riverdale
Case, Thomas C.....New York
Cates, John R., Jr.....New York
Cattanach, Geo. S.....Forest Hills
Cohen, Eugene J.....New York
Cole, Lewis F.....Clifton
Creevey, Kennedy .....Troy
de Grandpre, Gerard C.....Plattsburg
Dennee, Howard A.....Buffalo
Eisenberg, Harry.....New York
Emert, James T.....New York
Fenech, Nicholas J.....Brooklyn
Ferrara, Paul A.....Canastota
Filberbaum, Milton B.....Brooklyn
Freedman, Saul.....New York
Freston, Julian M.....New York
Garvey, Thomas Q., Jr.....New York
Gerling, John J.....Snyder
Goodman, Moses.....Brooklyn
Graff, Edward R.....Brooklyn
Graham, Henry T.....Brooklyn
Graham, Lewis J.....Corning
Griffin, Howard P.....Binghamton
Hall, Frank M.....Jamestown
Hare, Clarence C.....Elmsford
Heist, Carleton A.....Westfield
Hoesten, Raymond P.....Richmond Hill
Hoover, William F.....Jamestown
Hudack, Stephen S.....New York

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MEDICAL OFFICERS RELEASED BY THE NAVY

New York—Continued

Hyman, Albert S.....New York
Hynes, Barlow J.....Rockville Centre
Hynes, Thomas W.....Brooklyn
Ingham, Henry W.....Jamestown
McCartney, James L.....New York
McKendree, Charles A.....New York
McLaughlin, Robert R. M.....New York
Mainzer, Robert A.....Jackson Heights
Mathewson, Joseph B.....Bath
Matzner, Milton J.....Brooklyn
O'Connor, Harry A. D.....New York
Phillips, Richard B.....Rochester
Plank, Howard A.....New York
Podger, Kenneth A.....Kenmore
Prentice, Theodore C.....Aurora
Quigley, William F.....Oswego
Rakov, Daniel.....New York
Reilly, John W.....Ossining
Rosen, Max .....Brooklyn
Shaw, Henry C.....Rochester
Shepler, Lewis G.....Brooklyn
Sherwood, Davis W.....Ballston Spa
Shifrin, Leo A.....New York
Silberman, Henry.....Kew Gardens
Simon, Emanuel .....Albany
Sippel, Raymond L..Springfield Gardens
Stabins, Samuel J.....Rochester
Stein, Ephraim.....Brooklyn
Stuck, Robert G.....Wolcott
Surber, Frank R.....Bellrose, L. I.
Watson, William L.....New York
Woodward, Arthur P.....Brooklyn

Ohio

Coleman, Marion W.....Dayton
Cushing, Edward H.....Cleveland
Damitz, John C.....Akron
Disbro, Proctor P.....Cleveland
Engel, William J.....Cleveland
Fisher, James L.....Youngstown
Gardner, Stanley.....Bay Village
Groom, Dale L.....Lakewood
Gross, Benjamin G.....Cleveland
Haller, Harry A.....Parma
Hammersley, Eugene R.....Tuscarawas
Hann, William L.....Bryan
Haynes, Harley A. Jr.....Akron
Hedlund, Gerald O.....Painsville
Hudson, Ellis H.....Athens
Kennedy, Roscoe J.....Cleveland
Meck, Floyd S.....Cleveland
Neill, William A.....Toledo
Newell, Thomas E.....Dayton
Schneble, Richard C.....Dayton
Sharp, Howard V.....Cuyahoga Falls
Shaweker, Max.....Dover
Simpson, Walter M.....Dayton
Smith, Frederick A.....Akron
Stack, Leonard A.....Lorain

Pennsylvania

Burke, John F.....Shenandoah
Canivan, Robert C.....Housesdale
Cashman, William M.....Warren
Casper, Stephen L.....Lansdowne
Clifford, Richard V.....Drexel Hill
Deininger, John T.....Philadelphia
Durkin, John K.....Philadelphia
Eckenrode, Joseph L.....Lancaster
Ericsson, Francis S.....Ridgway
Ferguson, Lewis K.....Philadelphia
Fisher, Luther I.....Gettysburg
Fritz, Herbert H.....Bryn Mawr
Glenn, Herbert R.....State College
Good, Harry S.....Allentown
Gordon, John F.....Philadelphia
Greenspan, Herbert S.....Philadelphia
Gregg, William P.....Upper Darby
Grohowski, Alphonsus L..Wilkes-Barre
Guckavan, Martin F.....Philadelphia
Hahn, Karl W.....Bethlehem

Pennsylvania—Continued

Harkins, Herbert P.....Philadelphia
Harney, Chas. H.....Bryn Mawr
Hinkson, William J.....New Castle
Judd, Joseph H.....McKeesport
Kenney, Joseph R.....Pittsburgh
Kervin, Joseph A.....Bradford
Kneedler, Milo W.....Pittsburgh
Langston, William C.....York
Levin, Nathaniel M.....Philadelphia
McGeary, Francis J.....Jenkintown
Manley, John G.....Philadelphia
Murphy, Edward J. Jr.....Philadelphia
Newbaker, Bryce A.....Philadelphia
Norris, Robert F.....Philadelphia
O'Brien, Michael G.....Scranton
Pangburn, Edward W.....Philadelphia
Pistorio, Michael J.....Erie
Randall, Karl C. II.....Pittsburgh
Santee, Frederick L.....Wapwallopen
Saul, Leon J.....Media
Schenck, Harry P.....Wynnewood
Skinner, Robert W. III.....Wales
Smith, Austin T.....Wynnwood
Sonneborn, Duane G.....Philadelphia
Stroh, Robert H.....Syoming
Tice, Willard H.....Quakertown
Titus, Paul .....Pittsburgh
Vogel, Francis S.....McKean
Weaver, Harry S. Jr.....Philadelphia

Texas

Aderhold, James P.....San Antonio
Allday, Louie E.....Dallas
Black, Arthur P.....El Paso
Brazelton, Thomas B. Jr.....Waco
Burgess, John L. Jr.....Waco
Burr, Harry B.....Houston
Butler, Thomas B. Jr.....San Antonio
Cox, Stanley .....Groesbeck
Donnelly, Verner J.....Plainview
Evans, Fred G.....El Paso
Fears, Thaddeus A.....Beaumont
Fowler, Kenneth.....Houston
Glen, John K.....Houston
Hawkins, Charles P.....Fort Worth
Hill, Walter H.....San Antonio
Holman, Winston C.....Dallas
Homan, Ralph H.....El Paso
Lace, William T.....Fort Worth
McLaurin, Hugh L.....Dallas
Mansell, Chris C.....Lubbock
Martin, James R.....Houston
Miller, Ernest E.....Beeville
Miller, Lafayette T.....Dallas
Orr, Guy H.....Houston
Ravel, Vincent M.....El Paso
Reddick, Walter G.....Dallas
Ross, Jesse E. Jr.....Henderson
Shelburne, Samuel A.....Dallas
Short, Robert F.....Dallas
Strieder, Hugo J.....Moulton
Taubenhaus, Leon J.....Houston
Tottenham, John W. Jr..T Forth Worth
Turner, Claude G.....Houston
Valcik, John H.....Dallas
Walker, James B. N.....Dallas
West, Walter B.....Ft. Worth
Wills, Seward H.....Houston

Virginia

Adams, Walter P.....Norfolk
Amiss, James E.....Luray
Byrd, George B.....Norfolk
Cabaniss, James L.....Roanoke
Devine, Charles J.....Norfolk
Gardner, John E.....Salem
Helvestine, Frank, Jr.....Roanoke
Hogan, Chester F.....Richlands
Hopkins, Frank R.....Lynchburg
Hutchinson, Joseph R. B.....Arlington
Keefer, Clarence E.....Lynchburg

Virginia—Continued

Lyle, Herbert Phillips.....Portsmouth
Morgan, Rees .....Roanoke
Motyca, Lawrence J.....Norfolk
Nelson, Charles M.....Richmond
Peterson, Charles H.....Roanoke
Phillips, Benjamin F.....Quantico
Picot, Prosser H.....Alexandria
Simpson, George W.....Norfolk
Smart, Frank P.....Norfolk
Smart, William R.....Norfolk
Spengler, Luther C. Jr.....Roanoke

Washington

Calhoun, Emmett L.....Hoquiam
Foster, Ralph A.....Yakima
Harris, Milo T.....Spokane
Hoedemaker, Edward D.....Seattle
Lewis, William E.....Tacoma
McVay, John P. P.....Seattle
Pomeroy, Rex K.....Washington
Querna, Milburn H.....Spokane
Rice, Glen G.....Seattle
Shirey, Ralph W.....Yakima
Southcombe, Robert H.....Spokane
Standard, James F.....Seattle
Watkins, Harry C. Jr.....Hoquiam
Whitlow, Leslie W.....Seattle
Wood, Joseph G.....Prosser

West Virginia

Brown, James R.....Huntington
Churchman, Vincent T.....Charleston
Condry, Raphael J.....Elkins
Dobbs, Frederick H.....Wheeling
Duncan, Charles S.....Huntington
Fox, Merill R.....Charlestown
Glenn, Marshall .....Charleston
Haley, Peter A. II.....Charlestown
Klumpp, James S.....Huntington
Kroger, Louis E.....Logan
Little, Harold G.....Wheeling
Lutz, John E.....Charleston
Newhouse, Newman H.....Charleston
Nicholson, Berlin B.....Parkersburg
Pollock, Bruce H.....Charleston
Porterfield, Marvin H.....Martinsburg
Rusmisell, James A., Jr....Buckhannon
Thornhill, William A. Jr....Charleston
Wade, Franklin G.....Wellsburg

Wisconsin

Adrians, Wilbert A.....Appleton
Ansfield, Maurice J.....Milwaukee
Benson, Clifton E.....Bremerton
Brindley, Benjamin I.....Madison
Cochrane, William L.....Wayside
Culver, Lucian G.....Eau Claire
Dockry, Lyman E.....Kewaunee
Ebeling, Walter W.....Mt. Vernon
Fuson, Horace S.....Eau Claire
Houghton, William J.....Milwaukee
Johnston, Thomas L.....Milwaukee
Kramoris, Fred H.....Milwaukee
Little, William J. Jr.....Racine
Ross, Fordyce A.....Milwaukee
Ryan, William A.....Milwaukee
Sargent, James C.....Milwaukee
Schilling, Harold J.....Denmark
Sheehan, William C.....Stevens Point
Strand, Robert C.....Eau Claire

Wyoming

Cashman, James E.....Rawlins
Wallin, Stanley P.....Cheyenne
Zuckerman, Samuel S.....Cheyenne

Hawaii

Chandler, Harold M.....Waipahu, Oaku
Corboy, Philip M.....Honolulu
Millard, Robert D.....Honolulu
Palma, Joseph.....Honolulu

ORGANIZATION SECTION

"MEDICINE AND THE CHANGING ORDER"

Statement by the Committee on Medicine and the Changing Order of the New York Academy of Medicine in Comment on President Truman's Special Message to Congress on Nov. 19, 1945 Advocating Compulsory National Medical Insurance

During the past three years the New York Academy of Medicine, through its Committee on Medicine and the Changing Order, has been making an intensive study of current social and economic changes and of their effects on medical care and public health. This committee was appointed to study all problems involved in the distribution of adequate medical care, embracing not only the immediate management of the sick but also preventive medicine, public health, medical education and research, nursing, hospitals, convalescent care and rehabilitation, dental care, health education of the lay public, and finally the ways and means to meet the costs of such services. The Committee on Medicine and the Changing Order is not, in the strict sense of the term, a medical committee, nor does it represent solely the medical profession. It includes in its membership a large percentage of nonmedical persons, representing labor, industry, law, social work, the clergy and the public at large, who have had full opportunity to participate in the work of the committee and to express their points of view. The committee has met weekly and, at times, more often, to listen to the testimonies presented by invited experts. It has spent many hours in deliberation, collectively and in subcommittee meetings at which smaller groups of experts have studied and dealt with the specific phases of problems confronting present day medicine. The committee has been supported in its work by a corps of experts, and the costs of its work have been met by grants from the Commonwealth Fund, the Milbank Memorial Fund and the Josiah Macy Jr. Foundation. In every respect, therefore, the committee is representative of all varied and broad interests that are concerned in the problems of the extension and improvement of medical service.

The Committee on Medicine and the Changing Order has not yet completely formulated the recommendations of its final report, which it expects will be published during the current year. However, the special message sent to the Congress by President Truman on Nov. 19, 1945, in which he urges the creation of a system of national compulsory medical insurance as well as other changes in the organization of medical care in the United States, impels the New York Academy of Medicine, through its Committee on Medicine and the Changing Order, to issue a statement at this time.

The New York Academy of Medicine is essentially in accord with the objectives reflected in the President's message. It is fully cognizant of the many lacks in medical care which now exist in the United States and which most certainly are in need of urgent remedy. It agrees that the health of the people is a matter of national concern and that every effort should be made to provide all our people with adequate medical care and the opportunity to achieve and enjoy good health. However, while endorsing President Truman's objectives, the Academy cannot endorse all of the methods he proposes for their attainment.

We are mindful of the great achievements of modern medicine, which have been effected, particularly during the last forty years, under the prevailing system of medical practice. By the side of the many admitted inequities in the distribution of medical care stands the attested fact that the health record of the United States, as witnessed by mortality and morbidity statistics, is today outstanding. No nation of comparable size and complexity, with as many varieties of circumstances under which its people live and work, has attained as much in fostering the health of its citizens as has the United States. Before, therefore, venturing on untested schemes which involve abrupt nationwide changes we must strive to determine whether we could not achieve the objectives which the President has voiced and which we share more quickly and more effectively by procedures that are, in our opinion, less hazardous.

The President's message advances five specific recommendations. With the first of these, advocating the construction of hospitals and related facilities, the Committee on Medicine and the Changing Order is substantially in accord. In many rural areas and even in suburbs of large cities there is a serious shortage of hospital and clinical facilities. This problem, however, will not be solved by the simple procedure of erecting structures and creating physical facilities; for, to be effective, hospitals and health centers must be adequately staffed with competent personnel. At the present time there is not available, and the immediate future does not promise to provide, a large enough body of trained and experienced medical and other personnel to warrant a rapid expansion of hospital facilities. We are currently confronted with the distressing example of the grossly inferior hospitalization and medical care provided for our veterans. As in every other effort to extend and improve medical facilities, we are compelled to recognize the numerous interrelated factors—physical facilities, economic resources, medical education and training, and public education—each of which has a profound bearing on the other, and all of which, collectively, are essential to the expansion and improvement of the medical services.

The President's second recommendation proposes an expansion of public health, maternal and child health services. This too the committee endorses in principle, with the caution, however, that experimentation is needed to avoid the sacrifice of valuable facilities and procedures which are already functioning. We are not here venturing into virgin territory. Public health, as well as maternal and child health, has been the concern of the American public and of American government for many decades, and particularly during the last forty years. We already have many excellent facilities, some run by state and local official organizations, others by voluntary and professional groups. Whatever expansions are undertaken should be developed in relation to these existing facilities.

The President's third proposal, to advance and support medical education and research, the Committee on Medicine and the Changing Order also endorses in principle. Here too, however, governmental aid to medical education and research should be of such character that it fosters and supports but does not direct and dominate. The Academy, through its Committee on Public Health Relations, has already taken its stand on these matters in a resolution endorsing, with some slight modification, the Magnuson bill now before the Congress.

The President's fifth recommendation, that means should be devised for protecting workers against loss of wages resulting from sickness and disability, the committee endorses without reservation.

There remains to be considered the fourth of the President's recommendations, namely national compulsory medical insurance, labeled in the official address as "prepayment of medical costs." To this recommendation the Academy is definitely opposed. As a result of the studies of its Committee on Medicine and the Changing Order, the Academy is convinced that any scheme of national compulsory medical insurance at this time would lead to most unfortunate results affecting the health of the public and the science as well as the practice of medicine.

It is not possible, under the circumstances, to discuss this fourth proposal in the President's message in any detail. The proposed scheme of prepayment of medical costs based on the enactment of compelling legislation and the collection of tax

moneys is deceptive in its simplicity. Our studies have shown that the problem of providing for extensions of medical care is far from simple; indeed it is extremely complex, for it involves not only readjustments in the care of the sick but also, among other factors, the structure and content of medical education and the broad fields of social, industrial and preventive medicine. Payment for medical care through insurance represents only a fragment of the problem. It should be obvious that insurance cannot do more than spread a portion of the risk of costs. It cannot solve our medical problems because it cannot create the services essential for improving and extending medical care. It will not of itself teach the public to appreciate or to utilize effectively whatever medical resources are even now available to it. Insurance is most certainly incompetent to raise the quality of medical practice.

On the contrary, there is a wealth of experience which shows that under compulsory medical insurance on a nationwide scale though a larger number of people receive medical care, the quality of medical service rendered by the individual physician tends to decline.

Under our present forms of rendering medical care, which the President indicates would remain unchanged, the direct payment for medical services by a third party, the insurance fund, introduces a fundamental disturbance in the attitudes of both the subscribers and the doctors. The patient is tempted to demand more attention than he requires. Still more serious is the temptation of the practitioner to add to his income by rendering unnecessary service. Excessive demand, on the one hand, and unnecessary service, on the other, inevitably result in superficial performance. The financial rewards for volume of service and the pressure of patients constitute a combination of influences which to many is irresistible. This has been the recent experience in New Zealand, and it has been our own experience in the operation of workmen's compensation insurance.

Unfortunately, the alternative method of payment under an insurance scheme, namely capitation, whereby an annual stipend is paid to the physician for each insured patient on his list, likewise produces objectionable results. When the financial reward is fixed, some physicians are tempted to render as little service as possible.

Experiences abroad and in the United States by no means preclude the success of carefully organized prepayment medical insurance plans in this country. At the present time, however, we in the United States do not know how best to develop such medical insurance. We need a good deal of carefully planned and regulated experimentation. We lack experience not only from the actuarial angle but, what is still more important, from the service angle. We must realize also that we have no basis in our own experience on which to estimate what the contemplated extensions in medical service are likely to cost. We do know from European experiences that, under national compulsory medical insurance, even as the general level of medical practice is lowered its costs are raised. Furthermore, in the light of our own political history we must recognize that wherever there are available for distribution large sums of "government money" there also thrive political influence and political patronage.

The Academy's Committee on Medicine and the Changing Order is not concerned with maintaining the "status quo" in medicine. It has devoted several years to exploring new methods for correcting the many deficiencies in medical service. As a result of its studies it is convinced that the problems involved in the improvement and extension of medical service to all the people of the United States are numerous and diverse; hence, the ways to their possible solution are, and must be, of many kinds. In the opinion of the committee the expansion of medical services indicated in President Truman's first, second and third recommendations, with the modifications noted, would serve immediately to extend and to improve the quality of medical care rendered to our people and to lay the foundation on which a better organization of the medical profession could be achieved.

In opposing the fourth recommendation, calling for immediate nationwide compulsory medical insurance, the committee maintains that the problem of payment can be solved by methods less menacing to the high standards of medical service which have developed in this country over the years. To this end it offers a series of interrelated proposals designed not only to make more medical service available to our people but also to improve its quality. These proposals are not easily summarized out of their context in the final report, but it is possible at least to indicate the diverse paths on which the committee believes we must travel if we are to reach an orderly solution of the many problems which today confront us.

The committee recommends, among other things, that voluntary, nonprofit insurance be given a thorough trial as a means of providing medical services for low income families. At the same time it recognizes that plans of this nature cannot be expected to solve the entire problem and that in certain instances, for example when private resources are inadequate, government support, preferably in the form of federal or state grants-in-aid, will be required. The committee holds further that it may be desirable to conduct careful experiments at state and local levels with compulsory government insurance, so that we may have in the near future comparative experience with the relative values of voluntary and compulsory procedure.

In order to raise the quality and to round out the scope of medical care extended under any system of payment, the committee favors not only a number of revisions in medical education but the gradual extension of group practice. Under this form of practice, which promises far reaching improvements in the organization of practitioners and specialists, doctors conduct a joint enterprise in medical care in close cooperation with high grade hospitals, sharing a common plan of remuneration and responsibility for the quality of service they render. The group system is especially attractive to young physicians entering the practice of medicine who have been accustomed to work together while in training as hospital residents and who desire to retain their relationship to the hospital, with all its educational and professional advantages. Even those physicians who settle in rural communities should eventually be able, under a well planned system of medical care, to retain or establish such a relationship to a medical center.

It is essential, moreover, that medical group practice units be organized also in relation to teaching hospitals, since an extension of prepaid medical care to all people of low income must inevitably have important repercussions on medical education and research. The medical schools, for their part, must change their methods if they are to train doctors for a new form of medical care; and no form of medical care can afford to neglect the advantages to the patient of teaching and research.

Because it is much more economical—not alone in terms of money but in human values—to prevent the occurrence of illness than to cure it, the committee places special emphasis on preventive medicine in all forms of practice. To the same end, immediate efforts should be made to provide basic public health services for communities which are now lacking in those services. The committee insists also that further education and enlightenment are sorely needed by all groups concerned—by government agencies, by the medical professions, by private welfare organizations and, most of all, by the public at large.

What is wanted at this time, therefore, is not an overall national compulsory scheme but a variety of studies and experiments conducted by smaller units at local levels. Specific recommendations as to how such pilot studies and experiments may be carried out will be contained in the final report of the committee.

It is the conviction of the Academy that an evolutionary transformation of medical practice is essential if the benefits of modern medicine, and especially of preventive medical services, are to be made more freely available to the people. It is far better to proceed in a somewhat slower but more orderly manner than to expose the nation to the risks, as yet unmeasurable, which immediate adoption of national compulsory medical insurance would entail.

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Washington Letter

(From a Special Correspondent)

Jan. 7, 1946.

New Virus Disease with 40 per Cent Death Rate

Results of work by the National Institute of Health have been reported by Drs. B. J. Olsen and C. L. Larson of the U. S. Public Health Service on a new virus disease with a 40 per cent death rate reported to have entered the United States. The virus is said to belong in the same general classification as psittacosis, but it spreads directly from one person to another. The malady has pneumonia-like symptoms, and when it first appeared it was confused with the virus type of this disease. The virus was isolated at laboratories of the Louisiana State Health Board and the National Institute of Health. Its only recorded appearance was in Louisiana two years ago and it proved fatal in 8 of 19 cases. The virus was obtained in almost pure form at the Washington laboratories and a technic was developed for producing it in chick embryos. It quickly killed rats, mice and guinea pigs but had no effect on muskrats or ferrets. The virus would not respond to the sulfonamide drugs or to penicillin.

Veterans' Need for Hospital Highlights National Shortage

The appeal by the Veterans Administration to army, navy and civilian hospitals for the temporary loan of 40,000 beds to care for veterans has prompted newspapers to interpret the request as an indication of a critical national hospital shortage. The Veterans Administration reveals that its hospitals have beds for slightly more than 70,000 patients but that 150,000 beds will be needed by 1950 for members of the armed forces. The Navy has undertaken to supply 10,000 beds by September and the Army has been requested to furnish a similar number. Civilian hospitals are already overcrowded, and it has been proposed that a survey of civilian hospital facilities would be useful.

Medical Society Organized to Meet Cold Epidemic

Of general interest is the way in which the District of Columbia medical societies organized to provide medical care for families without a family doctor during the epidemic of colds. Dr. Walter R. Stokes, chairman of the society's committee on public relations, said "We recognize that many persons are having difficulty locating physicians to make home calls. We would suggest to them, if they do not have their own physicians, that they call the Medical Bureau, which will put them in touch with a doctor. Many doctors recently returned from the military service are listed with the bureau." Secretary Theodore Wiprud said about two hundred physicians are listed to accept emergency calls.

National Research Council Fellowships Resumed

Applications must be in by February 1 for special fellowships established by the National Research Council to enable young scientists whose graduate studies were interrupted by the war to resume their work toward the doctorate. The fellowships were made possible by a grant of $335,000 from the Rockefeller Foundation to help fill up the war-created gaps in research workers' ranks with the least loss of time. Successful applicants will be given $1,200 a year for single persons and $1,800 for married men, with an additional allowance up to $500 a year for tuition fees.

Allocation Controls Restored on Penicillin January 1

A sharp increase in demand for penicillin prompted the Civilian Production Administration to restore allocation controls over the drug, effective January 1. Prevalent illness throughout the country is blamed for the heavy current demand. Allocation of penicillin is expected to insure sufficient supplies for requirements of the Army, Navy, Veterans Administration, the Public Health Service and other domestic consumers.

Trial of Artificial Limb Makers Set for March 11

A Federal District court has set March 11 for the trial of a trade association, forty-five corporations and thirty-four individuals charged with violations of the Sherman Anti-Trust Act in the manufacture and sale of artificial limbs.

Lemke Presses for Bill Against Experiments on Animals

"Immediate action" will be sought by Representative Lemke, Republican of North Dakota, on his bill to end animal experimentation in Washington, when Congress comes back from its vacation. He says he will ask Representative McMillan, Democrat of South Carolina, chairman-elect of the House District Committee, for an early hearing. The Lemke bill provides a fine of $500 and imprisonment up to one year or both for any surgical operation performed in the District of Columbia on a dog other than for strictly curative purposes. The bill was introduced a year ago January 3 but has been dormant before the committee. Senator Langer, Republican of North Dakota, says he will give the bill full support when it reaches the Senate.

Veterans Administration to Give Veterans Preference

War veteran doctors will get preference in hiring by the Veterans Administration, Gen. Omar Bradley, administrator, assured after President Truman signed the controversial measure creating a separate medical department in the agency. Full page advertisements are being published to acquaint the profession with new opportunities at good salaries in the agency for medical men. The bill assures a complete new deal in medical care for veterans. It was approved against strong opposition of the Civil Service Commission. Major Gen. Paul R. Hawley, Acting Surgeon General, will continue temporarily as chief of the medical service, which will be put into effect immediately.

Tuberculosis the Principal Health Scourge in Greece

John Dula, senior child welfare specialist of the United Nations Relief and Rehabilitation Administration, reports that tuberculosis is the most virulent scourge in Greece today, with malaria a runner up. He saw entire villages in which every citizen seemed to be suffering from tuberculosis. Although there is less starvation, disease is widespread because many persons are still crowded together in dugouts, basements and lean-tos. Through joint efforts of the UNRRA, the Greek War Relief Association and the Greek government, vitamin foods are being served daily to thousands of child war victims.

Use of Atom for Health and Industry

The theory and production of atomic energy and the use of fissionable materials for health and industry would be studied by an atomic energy commission proposed in a bill introduced in Congress by Senator Brien McMahon, Democrat of Connecticut. The commission would have broad powers over the entire field of atomic science. Sixty days after passage of the proposed act it would be unlawful for any person to own or export fissionable materials. Senator McMahon is chairman of the special Senate Committee on Atomic Energy.

General Kirk and Mrs. Truman Launch Nurse Memorial Campaign

The campaign to raise $2,000,000 for a Nurse's National Memorial in Washington was opened here with Major Gen. Norman T. Kirk, Surgeon General of the Army, as principal speaker, and Mrs. Harry S. Truman guest of honor. After the luncheon Mrs. Dwight D. Eisenhower and wives of other high ranking army and navy officers who are sponsors signed certificates for those making contributions.

Duplication of Health Services in the Government

In an article revealing duplication in federal government agencies, Lindsay C. Warren, U. S. Comptroller General, points out that all public welfare activities are supposed to have been coordinated by the Federal Security agency. However there are still some half dozen agencies working on nutrition programs and research. These were two of many examples of waste cited by Mr. Warren.

Lehman Says UNRRA Needs More Funds

Herbert H. Lehman, director general of the United Nations Relief and Rehabilitation Administration, said that despite a new congressional authorization of $1,350,000,000 for 1946 the agency will have only sufficient funds to meet the most critical needs of devastated nations. With its current funds UNRRA must neglect many areas where help is needed.

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Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

District Meeting.—The Ninth Councilor District Medical Society was addressed at Harrison December 14 by Drs. Charles T. Chamberlain, Fort Smith, on "Heart and Aviation," and by Frederick H. Krock, Fort Smith, on "Medical Practice in the South Pacific."

CALIFORNIA

Industrial Hygiene Change.—Dr. Douglas G. MacPherson, San Francisco, formerly director of the Los Angeles City Division of Industrial Hygiene, is now chief of the Los Angeles County Division of Industrial Hygiene. He replaces Dr. Hugh E. Dierker Jr., who has become medical director of the Southern California division of General Motors Corporation, according to the *Industrial Hygiene News Letter.*

Lawrence Kolb Accepts New Mental Position.—Dr. Lawrence Kolb, Washington, D. C., formerly chief of the mental hygiene division of the United States Public Health Service, has been appointed deputy medical director of the State Department of Mental Hygiene in California. The first of its kind in California, the post was created by the 1945 legislature on the recommendation of Mrs. Dora Shaw Heffner, director, according to *Modern Hospital.*

Lectures by Dr. Owen Wangensteen.—Dr. Owen H. Wangensteen, professor and head of the division of general surgery, University of Minnesota Medical School, Minneapolis, presented a lecture on December 14 before Alpha Omega Alpha at Stanford University School of Medicine, San Francisco, entitled "Intestinal Obstructions." On December 15 he presented a lecture before the California Academy of Medicine, San Francisco, entitled "The Ulcer Problem."

CONNECTICUT

James Hamilton Leaves New Haven Hospital.—James A. Hamilton, who has been director of the New Haven Hospital, New Haven, for seven years, has announced his retirement, effective January 1. Mr. Hamilton will join a group of other hospital administrators to establish a hospital consulting service. He will continue as lecturer in hospital administration at Yale University School of Medicine, New Haven, according to *Modern Hospital*

Survey of Tumor Clinics.—Dr. Nestor William Wawro, New Haven, has been chosen to conduct a study of the clinical aspects of the tumor clinics of Connecticut. The appointment was made by the committee on tumor study of the Connecticut State Medical Society, which is cooperating with the Association of Tumor Clinics. Dr. Wawro's studies will fit into the joint plan of the basic audit or survey sponsored by the Connecticut Cancer Society. The entire project was initiated to guarantee that the funds of the society would be spent wisely.

State Society Holds Dinner Meeting.—A feature of the semiannual meeting of the house of delegates of the Connecticut State Medical Society, New Haven, December 13, was a dinner session attended by the society of the woman's auxiliary. Among the speakers at the dinner were:

Dr. Joseph H. Howard, Bridgeport, president of the Connecticut State Medical Society.
Mrs. James Raglan Miller, Hartford, president, woman's auxiliary.
Dr. John F. Kenney, Pawtucket, president, Rhode Island Medical Society.
Dr. Roger I. Lee, Boston, president, American Medical Association, the title of whose address was Timeo Danaos et Dona Ferentes.
Dr. Morris Fishbein, Editor of THE JOURNAL, who spoke on Medicine in the Postwar World.

INDIANA

Cancer Society Organized.—The Indiana Cancer Society, Inc., has been created with William H. Ball, Muncie, as president and Mrs. A. L. Taggart, Indianapolis, secretary. The purpose of the organization is to collect and disseminate information concerning the symptoms, diagnosis, treatment and prevention of cancer and to aid, in cooperation with accredited physicians, in the establishment, development, equipment and maintenance of hospitals, clinics, laboratories and other facilities for the care of cancer patients and for research into the cause and cure of cancer.

IOWA

Personal.—Dr. Max L. Durfee, Cedar Falls, has resigned at the University of Oklahoma to return to his position as director of the student health center at the Iowa State Teachers College.——Dr. Melvin T. Johnson has been named medical director of Iowa Public Health District number 5, Fort Dodge, succeeding Dr. Forrest J. Austin, now of Omaha, resigned.——Robert E. Neff, Ph.D., Iowa City, has been appointed superintendent of the Methodist Hospital, Indianapolis.

KANSAS

Graduate Medical Education.—On January 21-25 a course on physical medicine and occupational therapy will be held at the University of Kansas School of Medicine, Lawrence-Kansas City, Mo. This is the second course in a series planned by the new division of graduate medical education, of which Dr. Edward H. Hashinger, professor of clinical medicine, is acting director. The first course was held October 29-November 2 on general therapeutics. Other courses in the series include:

Pediatrics, February 25-March 1.
Internal medicine, psychiatry and dermatology, March 25-29.
Eye, ear, nose and throat, April 15-19.
General surgery and radiology, May 13-17.
Obstetrics and gynecology, June 17-21.

MASSACHUSETTS

Refresher Course for Discharged Medical Officers.—Harvard Medical School will offer a six months refresher course, beginning February 1, to medical officers discharged from the armed forces. The course, under the supervision of Dr. Eugene C. Eppinger, Boston, assistant dean, formerly a colonel in the army, will emphasize current scientific knowledge and theories and advances in the medical field. Instruction will be given by the regular members of the preclinical and clinical departments of the medical school. In offering such a course the medical school is attempting to assist individuals who on separation from the service wish to obtain the latest knowledge in the broad field of medicine in preparation for reentering a civilian medical career. Dr. Eppinger was most recently chief of the communicable disease branch of the Medical Consultants Division, Office of the Surgeon General, in Washington, and is now returning to Harvard Medical School, Boston, as assistant dean in charge of courses for graduates.

MICHIGAN

Changes in Health Personnel.—Dr. Russell E. Pleune, Hancock, formerly director of the Houghton-Keweenau-Baraga Health Department and recently released from the army, has been appointed deputy commissioner of health of the upper peninsula with offices in Escanaba, with the state board of health. Dr. Pleune will succeed Dr. Wilber J. M. Menke.

Upjohn to Erect New Antibiotic Plant.—With the purchase of 500 acres 4 miles southeast of the city, the Upjohn Company, Kalamazoo, recently announced plans to expand its facilities for the manufacture of antibiotics. Streptomycin, as yet produced only in pilot laboratory quantities, will be put into large scale production when the new plant is finished. George F. Cartland, Ph.D., who has been head of the company's research work in antibiotics, will supervise the operation of the new unit under M. C. Hart, Sc.D., vice president and director of research.

MONTANA

Personal.—Dr. Carl W. Hammer, Oxford, Mich., has been named assistant professor of health education at the Montana State College, Bozeman, and director of the Student Health Clinic, it is reported.——Dr. Harry V. Gibson, health officer for a number of years of Great Falls, has been placed in charge of the reorganized health department in Great Falls and Cascade County.——Dr. Raymond L. Eck, Lewistown, has been named coroner of Fergus County.

NEW JERSEY

Hospital Overcrowded, Patients Cared For in Home.—With 691 patients crowding the Newark City Hospital, a plan for home treatment of the sick, beginning December 14, was announced in the New York *Times.* Patients will be treated by private physicians in their homes at rates of $2 a visit during the day and $3 at night. The municipality will pay the physician's fees on proof of the patient's indigence. Otherwise the patient will pay.

NEW YORK

Millions to Be Spent in Syracuse Expansion.—Syracuse University College of Medicine is planning an expansion program to cost between $20,000,000 and $25,000,000 in the next ten years, newspapers report. The program will include an expansion of the medical center, a new university hospital and a ten story addition to Memorial Hospital.

Personal. — Dr. Archibald S. Dean, district state health director, on November 19 was appointed acting head of the department of hygiene and public health, University of Buffalo School of Medicine, filling temporarily the position formerly held by Dr. William T. Clark, now superintendent of the Masonic Home and Infirmary, Utica.

Walter Pamphilon Named Assistant Commissioner of Mental Hygiene.—Dr. Walter M. Pamphilon, Willard, assistant director of the Willard State Hospital, has been named assistant commissioner of the New York State Department of Mental Hygiene. According to the *Psychiatric Quarterly*, Dr. Pamphilon, who had previously been detailed as acting medical inspector, has been assigned to the inspection service of the department and will be on duty in the New York City office for part of his time, besides assisting with the department's program for postwar building. Graduated at the University of Toronto Faculty of Medicine in 1922, Dr. Pamphilon entered the state service at Buffalo State Hospital in 1922. He had been at Willard since 1933, when he went there as first assistant physician, later being designated as assistant director. Dr. Kenneth K. Slaght, assistant director at Rochester State Hospital, has been named acting medical inspector.

New York City

The Harvey Lecture. — Max Delbruck, Ph.D., assistant professor of physics, Vanderbilt University, will deliver the fourth Harvey Lecture of the current series at the New York Academy of Medicine on January 17. Dr. Delbruck will speak on "Experiments with Bacteriophages."

Dr. Merrill Wins the Modern Hospital Award.—Dr. Ambrose P. Merrill Jr., superintendent of the Home for Incurables, is the winner of the 1945 Modern Hospital Gold Medal Award. His prize winning article, "Suspect Nurseries—A Case History of Experience at St. Luke's Hospital, Chicago," appeared in the *Modern Hospital* for January 1945, shortly after he moved to New York from St. Luke's Hospital, Chicago, where he served as medical director for three years. Honorable mention certificates were awarded to Dr. Edmund E. Walker, superintendent, Springfield Hospital, Springfield, Mass., and Jennie F. I. Dixon, director of social service at Springfield Hospital, for their article "Chronic Disease Ward," published in the June 1945 issue of the *Modern Hospital*.

Blood Bank for Cancer Patients.—The establishment of a field army blood bank for cancer patients at Memorial Hospital was announced December 11. Registration of donors will be handled at 2 West 106th Street, the Old Memorial Hospital Building, which is also Field Army headquarters. Blood donations by members of the Field Army who volunteer will be taken at the New Memorial Hospital, 444 East 68th Street. Blood of those acceptable will be used for cancer patients who are unable to pay a professional donor. If blood is given to a patient able to pay, the money received will be placed in the general fund of Memorial Hospital, where it will accrue to the benefit of cancer patients. The service will be extended to other hospitals as required.

Medical and Hospital Librarianship. — The School of Library Service of Columbia University announces for the 1946 summer session a program of related courses on medical and hospital librarianship. One course, medical library administration, aims to equip librarians to administer medical, nursing, pharmaceutical and dental libraries. Administrative matters, such as the cataloguing and classification of medical literature, personnel problems, budgets, the rare book room, reference service and the selection and purchase of books and periodicals, will be presented. Emphasis also is to be laid on the literature of medicine and its collateral sciences. A second course, library work with hospital patients, treats the values of library work with patients, the facts and conditions affecting its performance, the selecting of books and the managing of collections for use in it, and ways of dealing with ill people and meeting their needs. Brief attention is given to the conducting of libraries for the physicians and nurses of a hospital staff. Field assignments and visits of observation may be arranged for students desiring to supplement their study in this way. Some may like also to pursue certain related library school courses, notably psychologic foundations of reader guidance and reading interests and habits of adults, or several guidance and psychology courses given elsewhere on the campus. Further information may be obtained by addressing the Dean, School of Library Service, Columbia University, New York 27.

NORTH CAROLINA

Medical and Surgical Symposium. — The third annual medical and surgical symposium of the Watts Hospital, Durham, will be held February 13. Among the speakers will be:

Dr. Wilburt C. Davison, Durham, Some Remarks on Postgraduate Medicine.
Lieut. Col. Louis A. M. Kruse, Camp Butner, Some Hemolytic Processes Including the Rh Factor.
Dr. Norris W. Vaux, Philadelphia, The Treatment of Habitual Abortion.
Dr. Edward A. Strecker, Philadelphia, Psychiatry Speaks to Democracy —About Mothers and Moms.
Dr. Arthur M. Shipley, Baltimore, Diverticulitis of the Colon.
Dr. James E. Paullin, Atlanta, Ga., The Relationship of Medical Practice to Gerontology.
Dr. Louis Hamman, Baltimore, General Features of Periarteritis Nodosa, Particularly from the Standpoint of Diagnosis.
Dr. Isidor S. Ravdin, Philadelphia, The Pathologic Physiology of Biliary Tract Disease.
Dr. Eugene P. Pendergrass, Philadelphia, The Roentgenologic Aspects of Biliary Tract Disease.

In addition there will be clinical pathologic conferences conducted by the members of the staffs of the Medical College of Virginia, Richmond, and the University of Virginia Department of Medicine, Charlottesville.

NORTH DAKOTA

Changes in State Health Department.—Dr. William M. Smith, Rome, N. Y., from 1937 to 1942 assistant district state health officer in New York State and recently released from military service, has been appointed director of the division of preventable diseases of the North Dakota State Department of Health, Bismarck. Dr. George F. Campana, Albany, state health officer, has been acting health officer of the division. Dr. Robert R. Kling, Rochester, N. Y., has been chosen tuberculosis consultant in the division of preventable diseases.

OHIO

Health Officer for Twenty-Five Years.—Dr. Harley J. Powell, Bowling Green, health commissioner of Wood County for more than twenty-five years, was honored with a luncheon recently to mark the occasion and in recognition of his retirement, which was planned for the end of the year.

New Division Chiefs in State Departments of Health. —Dr. Percy L. Harris, Ravenna, health commissioner of Portage County since 1938, has been appointed chief of the division of communicable diseases of the Ohio State Department of Health, according to the state medical journal. Dr. Thomas F. Mancuso, acting director of the division in industrial hygiene, Oregon State Board of Health, Portland, has been appointed chief of the division of industrial hygiene of the Ohio Department of Health. Dr. Charles M. McGill, who has been serving in the Ohio position (THE JOURNAL, Oct. 20, 1945, p. 564), has taken over the Oregon activity.

Mental Hospital Dedicated.—Ohio's first receiving hospital for mental patients, the first of five such hospitals for which the state legislature made appropriations in the $23,000,000 expansion program of the state welfare department, was opened at Youngstown on November 20. The 85 bed hospital, which was the abandoned Youngstown Municipal Hospital, will serve fourteen northeastern Ohio counties. Others are to be located at Cleveland, Akron, Athens and Columbus. Dedication speeches were made by Frazier Raams, state welfare director, and Dr. Frank F. Tallman, Columbus, state commissioner of mental diseases, according to the *Ohio State Medical Journal*.

PENNSYLVANIA

Philadelphia

Survey of Tuberculosis Among the Diabetic. — The board of directors of the Philadelphia County Medical Society endorsed the proposed survey of the incidence of tuberculosis among diabetic patients to be conducted by the Philadelphia Tuberculosis and Health Association. The endorsement was influenced by favorable recommendations by the society's committees on diabetes and tuberculosis.

Course for Medical Laboratory Technicians. — The Jewish Hospital offers a twelve months training course for medical laboratory technicians and prepares young women for the examination given by the Registry of Medical Technologists of the American Society of Clinical Pathologists. Students

are accepted who have had two years of college work with suitable college courses in chemistry, biology and physics. The course includes practical and theoretical training in bacteriology, serology, hematology, clinical microscopy, histology, parasitology and biochemistry. Prospective students should file a copy of their college credits with the director of laboratories and with the Registry of Medical Technologists, Ball Memorial Hospital, Muncie, Ind. Dr. Charles Weiss is the director of laboratories.

Pittsburgh

Special Society Election.—Dr. James A. Mansmann is the new president of the Pittsburgh Allergy Society; Dr. Lester L. Bartlett is secretary-treasurer.

Psychiatrist Recommended as Adjunct to Behavior Clinic.—Establishment of a psychiatric clinic as an adjunct to the behavior clinic in combating crime was proposed in the annual report of Dr. Edward E. Mayer, supervising director of the clinic, to the Allegheny County common pleas judges. Recalling that the behavior clinic provides the court with psychologic interpretations of prisoners, Dr. Mayer said that maladjusted prisoners with deep seated personality problems "should have the opportunity to be referred to a psychiatric clinic treatment." He further stated that such a clinic dealing with "the entire family situation would provide help for the excessive drinker, assist in reconciling couples seeking divorce and assist in adjusting the sexual psychopathic."

RHODE ISLAND

Cancer Detection Clinic.—A cancer detection clinic for women has been opened at the Rhode Island Hospital, Providence. The clinic is intended for semiannual physical examinations of well persons. It is free and will be open to any woman who wishes to attend. If any disease condition is found, the patient will be referred back to her own doctor or to one of a group of men who will be designated by the Rhode Island Medical Society.

TENNESSEE

New Professor of Anatomy.—Frank Harrison, Ph.D., assistant professor of anatomy, University of Tennessee College of Medicine, Memphis, has been appointed professor and head of the department of anatomy, effective April 1. Dr. Harrison succeeds Dr. Kendall B. Corbin, Memphis, who is to join the staff of the Mayo Clinic, it is reported.

Changes in Health Personnel.—Dr. Roy J. Settle, recently discharged from the army medical corps, has been appointed director of the Williamson County Health Department, succeeding Dr. William B. Farris, who went to Gallatin. Dr. Willoughby J. Rothrock Jr., Philadelphia, has been assigned by the U. S. Public Health Service as director of the tuberculosis control program for the Chattanooga-Hamilton County Health Department. Dr. Marion G. Fisher, Washington, has resigned as director of the Washington County Health Department, it is reported.

Sentence Two to Fifteen Years for Kidnaping Physician.—Two youths, both of Dayton, one 18 years of age and one 21, pleaded guilty in criminal court October 31 to charges of kidnaping and robbing Dr. German P. Haymore, Chattanooga, and were sentenced to serve fifteen years in the state penitentiary. According to the Chattanooga *Times* Judge Frank S. Darwin imposed a sentence of ten years each on the charge of kidnaping and added a prison term of fifteen years each in the robbery cases, the sentences to run concurrently. The physician was kidnaped early in August while sitting in his automobile.

UTAH

Regional Meeting for Clinic Research.—The first regional meeting of the Western Section of the American Federation for Clinical Research was held under the auspices of the University of Utah School of Medicine, Salt Lake City, at the Salt Lake County General Hospital, Salt Lake City, December 28-29. Among the speakers were:

Dr. Paul M. Aggeler, San Francisco, Platelet Counts and Platelet Function.
Dr. Louis S. Goodman, Salt Lake City, Experimental Determination of Anticonvulsant Activity.
Dr. Franz R. Goetzl, Oakland, Calif., The Influence of Acetylsalicylic Acid on Analgesic Effects of Induced Pain.
Dr. Carl G. Heller, Portland, Ore., Alarm Reaction in Burned Patients.
Dr. Abe Ravin, Denver, Congo Red in Myasthenia Gravis.
Dr. Ferdinand R. Schemm, Great Falls, Mont., The Effect of High Fluid Intake on Venous Pressure.
Dr. Maxwell M. Wintrobe, Salt Lake City, Studies on the Mechanism of Anemias of Infection.
Dr. Irving S. Wright, New York, Experiences with Dicumarol in the Treatment of Coronary Thrombosis.

WASHINGTON

Personal.—Dr. Clifford S. Halvorsen has been named superintendent of the Northern State Hospital, Sedro Woolley, effective December 1. Since Dr. Halvorsen returned from overseas, he has been chief of the neuropsychiatric service at Madigan General Hospital at Fort Lewis. Dr. Halvorsen succeeds Dr. James W. Doughty, Sedro Woolley, resigned, who held the position for twenty-nine years.

Appointments to State Board of Health.—Mr. Irvin R. Vaughn, who was appointed as acting state registrar with the state department on November 26, will be the acting head of the public health statistics section. Mr. Vaughn was formerly director of public health education and assistant director of vital statistics for the state board of health of South Dakota. Dr. Clarence Arthur Elden was appointed obstetric consultant with the state department of health on November 15 and will work in the maternal and child health and crippled children's section. Dr. Elden had previously been for thirteen years assistant professor of obstetrics and gynecology at the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., and also was in private practice during that time.

WEST VIRGINIA

Mental Clinics.—Beginning January 1, semimonthly clinics will be conducted at Spencer State Hospital (mental) by Dr. Edward F. Reaser, Huntington, assistant superintendent at Huntington State Hospital, and Dr. Orin R. Yost, newly appointed superintendent at Weston State Hospital (THE JOURNAL, Dec. 8, 1945, p. 1037). This is part of a new program agreed on by Dr. Reaser, Dr. Yost and Dr. Charles T. Taylor, superintendent of the Huntington institution, and Alfred L. Morris, Jodie, head of the Spencer State Hospital, for the treatment of patients at the three state mental institutions.

GENERAL

New Journal of Medicine and Allied Sciences.—The first number of the new *Journal of the History of Medicine and Allied Sciences*, to be published quarterly by Henry Schuman, was to make its appearance in January. Dr. George Rosen is the editor.

Southeastern Surgical Congress.—The Southeastern Surgical Congress will hold its next assembly at the Peabody Hotel, Memphis, March 11-13. Additional information may be obtained from Dr. Benjamin T. Beasley, secretary-manager, Southeastern Surgical Congress, Atlanta 3, Ga.

Orthopsychiatric Meeting.—The American Orthopsychiatric Association will hold its annual scientific meeting at the Hotel New Yorker, New York, February 14-16. Recently THE JOURNAL, in a list of continuation courses, noted that this meeting would carry a registration fee of $300. This fee should be $3.

New Review of Psychiatry and Neurology.—The *Quarterly Review of Psychiatry and Neurology* will be published in January, April, July and October, according to the Washington Institute of Medicine, Washington, D. C. Dr. Winfred Overholser, Washington, is editor in chief of the new publication.

Planned Parenthood Federation.—"The Challenge of Today's Children" will be the theme of the annual meeting of Planned Parenthood Federation of America at the Waldorf Astoria Hotel, New York, January 22-23; the session will observe the twenty-fifth anniversary of the founding of the original Birth Control League of America by Margaret Sanger. The second day's subject will be "Health Hazards Facing the World's Children."

George Darling Named Executive Secretary of National Groups.—George B. Darling, Dr.P.H., formerly president of the W. K. Kellogg Foundation, who since 1943 has been associated with the division of medical sciences of the National Research Council, Washington, first as executive officer of the committees on military medicine and later as vice chairman of the division, has been appointed executive secretary of the National Academy of Sciences and of the National Research Council.

Teaching of Russian in American Universities.—Chemists studied Russian in larger numbers than did other scientists, it was revealed in a recent survey among twenty-five universities conducted by the American Association of Teachers of Slavonic and East European Languages. Biologists, including physicians and medical students, came next, followed by physicists, including radio engineers. Of the institutions covered by the inquiry, twenty-one now accept or recommend

Russian in partial fulfilment of the language requirements for graduate degrees in science. In other universities, acceptance, although not decided on, is probable. About three hundred students were studying scientific Russian in the 1944-1945 school year in these universities, and over one hundred were studying general Russian. Organization of courses in Russian for scientists, wider acceptance by American universities of Russian for graduate degrees in science, and procurement of Russian technical books and magazines are urged by the committee on teaching scientific Russian of the American Association of Teachers of Slavonic and East European Languages. The survey stemmed from a progressive recognition of the importance for American scientists of closely following the published Russian researches in their fields. The committee held a meeting in Chicago December 27-29 to discuss the need.

Special Society Elections.—Dr. Raymond C. Beeler, Indianapolis, was chosen president-elect of the American Roentgen Ray Society at its recent meeting. Dr. Ross Golden, New York, was inducted into the presidency. Other officers include Drs. Francis F. Borzell, Philadelphia, and Ellis R. Bader, Cincinnati, vice presidents; Harold Dabney Kerr, Iowa City, secretary, and James Bennett Edwards, Leonia, N. J., treasurer. The 1946 meeting will be held at the Netherland-Plaza Hotel, Cincinnati, September 17-20.——At the annual meeting of the Central Society for Clinical Research November 2-3 in Chicago Dr. Roy W. Scott, Cleveland, was named president, Dr. Carl V. Moore, St. Louis, vice president, and Dr. Ford K. Hick, Chicago, secretary-treasurer.——At the twenty-eighth annual meeting of the National Malaria Society in Cincinnati, November 13-15, Dr. Mark F. Boyd, Tallahassee, Tenn., was inducted into the presidency. Mark D. Hollis, Atlanta, Ga., was named president-elect, J. A. Mulrennan, B.S.A., Jacksonville, Fla., vice president, and Martin D. Young, Sc.D., Columbia, S. C., secretary-treasurer.——At the twelfth annual meeting of the American Academy of Tropical Medicine, held November 14 at Cincinnati, Dr. James S. Simmons, M. C., Washington, D. C., was elected president, Dr. George K. Strode, New York, vice president, Ernest C. Faust, Ph.D., New Orleans, secretary, and Dr. Thomas T. Mackie, M. C., New York, treasurer.

Insurance Research Fund Starts to Function.—Grants totaling $126,000 to be used for research into the causes of cardiovascular diseases have been made to the medical schools of six universities by the Life Insurance Medical Research Fund, it was announced December 23 by Mr. M. Albert Linton, Philadelphia, chairman of the fund. The recipients of these grants, the first to be made by the fund since its organization by 147 life insurance companies last fall, are as follows:

Drs. Joseph Victor, department of pathology, and Dickinson W. Richards Jr., department of medicine, both of Columbia University College of Physicians and Surgeons, New York.

Drs. Maurice Visscher, department of physiology, and Arthur Kirschbaum, department of anatomy, both of University of Minnesota Medical School, Minneapolis.

Dr. Henry C. Bazett, department of physiology, University of Pennsylvania School of Medicine, Philadelphia.

Dr. Gladys J. Fashena, department of pediatrics, Southwestern Medical College of the Southwestern Medical Foundation, Dallas, Texas.

Dr. John R. Smith, department of internal medicine, Washington University School of Medicine, St. Louis.

Dr. John R. Paul, department of preventive medicine, Yale University School of Medicine, New Haven.

This is the largest amount to be devoted in any one year to research in this field, with a total of $3,500,000 in prospect over a six year period. The grants made by the fund were recommended by the medical advisory committee, of which Dr. Francis G. Blake, dean of Yale University School of Medicine, New Haven, is head and approved by the board of directors. Officers of the fund elected for 1946 were Mr. Linton, president of the Provident Mutual Life Insurance Company and the chairman during the organization period, elected chairman; Leroy A. Lincoln, president, Metropolitan Life Insurance Company, vice chairman; Leigh Cruess, vice president, Mutual Life Insurance Company of New York, secretary; Morgan B. Brainard Jr., assistant treasurer, Aetna Life Insurance Company, treasurer (THE JOURNAL, Dec. 29, 1945, p. 1279).

Sugar Research Awards.—A total of $45,000 will be awarded within the next five years by the Sugar Research Foundation, New York, for the development of demonstrated original knowledge about, or practical uses for sugar in medicine, agriculture, the arts, the industries or other fields of human endeavor as judged by their importance in terms of the advancement of knowledge and of the public benefit. On or about March 1 and of each of the three succeeding years an intermediate prize of $5,000 will be given for the most important discovery or invention of the nature described which has been made during the preceding year. On March 1, 1950 a grand prize of $25,000 will be given for the most important discovery or invention which has been made during the five years preceding. An advisory committee has been created by the National Science Fund of the National Academy of Sciences, through which the awards will be administered. Members include:

A. Baird Hastings, Ph.D., Hamilton Kuhn professor of biochemistry, Harvard Medical School, Boston.

Charles F. Kettering, Sc.D., Dayton, Ohio, vice president of the General Motors Corporation and president, American Association for the Advancement of Science.

Carl S. Marvel, Ph.D., professor of organic chemistry, University of Illinois College of Medicine, Chicago, and president, American Chemical Society.

Edmund W. Sinnott, Ph.D., Sterling professor of botany, Yale University School of Medicine, New Haven, Conn.

Dr. William C. Stadie, John Herr Musser professor of research medicine, University of Pennsylvania School of Medicine, Philadelphia.

Vincent Du Vigneaud, Ph.D., professor of biochemistry, Cornell University Medical College, New York.

The Sugar Research Foundation has recently brought out a booklet concerning its prize award program and general activities. Since the organization of the foundation on June 10, 1943 it has awarded grants totaling $415,875.

LATIN AMERICA

Health Activities in Latin America.—*Examination of Food Handlers Halted Because of Cost to Government.*—Blood tests and physical examinations for food handlers in the cities of Panama and Colon have been stopped by the Department of Health for the Republic, it was announced November 10 by Dr. Alberto Navarro, director of public health. Dr. Navarro said that the tests will no longer be required because of the high cost to the government and because they have been found to be ineffective. Although the examinations have been halted, the department will continue to take measures to protect the public health, Dr. Navarro said. One of these will be a series of talks on personal hygiene to be held in various sections of the cities. Food handlers will be required to attend these lectures.

Course on Cancerology.—A postgraduate course on cancerology will be given at the Faculty of Medicine of the University of Havana for physicians of Cuba and of other countries under the direction of Dr. Nicolas P. Duany, Havana. The course will be given January 8-February 11. A diploma will be given to physicians who take the complete course. Further information can be obtained from the Secretariá de la Facultad de Medicina de la Universidad de la Habana, Havana, Cuba.

Proposed Medical Center and University.—The Venezuelan government will spend more than $10,000,000 in the construction at Caracas of a combination medical center and university which will be the largest and best equipped in Latin America, it is reported. A staff of over a hundred doctors, specializing in every branch of medicine, will be assigned to the new hospital with the purpose of improving the health rate of Venezuelan nationals. The government of Venezuela is said to be working on a national program which will greatly improve living conditions of the laboring classes.

Hospital News.—Plans are going forward for a maternity wing in the Amador Guerrero Hospital, to be known as the Roosevelt Memorial Ward.

Public Health Laboratory in the Dominican Republic.—In August 1945 an agreement was signed providing for a building to be used as a central public health laboratory of the Department of Health and Public Welfare of the Dominican Republic, according to the *Newsletter* of the Health and Sanitation Division, Institute of Inter-American Affairs. Adequate facilities for disease diagnosis by application of approved laboratory methods have not heretofore been provided, and present governmental facilities for such services are limited to certain diagnostic determinations and a restricted volume of specimen examinations. Services in the new laboratory will include clinical and laboratory examinations and related determinations as well as other public health activities, including instruction of students in laboratory technic through classes, demonstrations and practical experience and the maintenance of a library which will serve as a depository for reference material on laboratory and allied subjects. Operation of the services is to be inaugurated in accordance with an agreement between the National Department of Health and the Rockefeller Foundation, which provides funds for proper establishment of services and supervised operation for a period of three years. Construction of the building will be financed by the Servicio Cooperativo Interamericano de Salud Publica.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 8, 1945.

Government Proposal to Abolish the Sale of Medical Practices

The medical profession is concerned by the statement in the House of Commons by the minister of health, Mr. Bevan, in which he affirms that the government believes it will be incompatible with the provision of an efficient national health service for the future exchange of medical practices and the creation of new practices within that service to be left entirely unregulated. Steps should be taken to secure a proper distribution of doctors to fit the public need. Intervention in this field will probably have the effect of preventing the sale and purchase of practices by doctors taking part in the new service. The government therefore has thought it right to give this warning. But there will be an appropriate measure of compensation to doctors in respect to loss of capital value directly caused by the new arrangements.

The effect of this pronouncement produced an immediate reaction from the British Medical Association. Its secretary, Dr. Charles Hill, who is also secretary of the negotiating committee of the medical profession with the government, stated in the *Times* that compensation for loss of capital values incurred by doctors is only just. The capital represented by a doctor's practice he has paid for or built up, and he relies on it for his retirement years. When a practice changes hands, what is transferred is good will; the patients themselves are free to accept the incoming doctor or choose another as they please. Many will not share the government's view that an efficient medical service can be secured only by such a fundamental change in the existing arrangements. If the government assumes to direct doctors where and how and with what colleagues they shall practice, the proposal is fraught with danger to the public and to professional freedom. Doctors, like other workers, should be free to choose the form, place and type of work they prefer, without government or other direction. For these reasons the attitude of the medical profession to any proposal to abolish the sale and purchase of practices can be determined only when it is known what is to be substituted for the existing arrangements.

New Medical Journals

The termination of the war has allowed the British Medical Association to carry out its intention to launch three new journals, which has been discussed for the past two years. These journals are the *British Journal of Pharmacology and Chemotherapy*, the *British Journal of Social Medicine* and *Thorax*. The first is to be published in cooperation with the British Pharmacological Society and the third with the Association for the Study of Diseases of the Chest. The proposal to publish the second journal came from Brig. F. A. E. Crew, Prof. Lancelot Hogben and Sir John Orr. Papers for the first journal should be sent to Dr. H. R. Ing, Department of Physiology, Oxford; for the second, to Brig. F. A. E. Crew, Usher Institute, Warrender Park Road, Edinburgh, 9; for the third, to Mr. N. R. Barrett, F.R.C.S., 2 Dorset Street, London, W. 1.

British and American Diets Compared

An important statement comparing food consumption in Britain, Canada and the United States has been issued by the Ministry of Food. It should be realized that the food conditions existing during the war continue in Britain, where aid to Europe has impeded recovery. This year the consumption of food in Britain is lower than in the two North American countries by about 5 per cent for fats, 15 per cent for sugar, 25 per cent for meat and milk, 40 per cent for eggs, 40 to 60 per cent for fruit and 90 per cent for poultry. On the other hand, consumption in Britain exceeds that of Canada and the United States by about 20 per cent for grain products, 50 to 100 per cent for potatoes and about 300 per cent for fish. Vegetable consumption is lowest in Canada and highest in the United States. The principal change in the British diet due to the war is a great reduction in meat; the war ration of the quantity of meat which can be bought weekly for 28 cents continues. This amounts to only about ¾ pound of meat weekly. The great increase in fish consumption is compensatory. Vital statistics have actually improved during the war. The people apparently have not suffered from the severe rationing which dislocated their ordinary food habits. Bread was never rationed, and sufficient food could be obtained although not the food desired.

PARIS

(From Our Regular Correspondent)

Nov. 28, 1945.

Organization of Scientific Research in France

Frederic Joliot-Curie, professor at the Collège de France, director of the National Center for Scientific Research, reported to the congress on the work effected since the liberation. There is a National Committee for Scientific Research comprising a membership of 280 working under the direction of 15 members. The amalgamation of pure and applied research has been effected. A second innovation (which has been made only in France) is the creation of a body of technicians from every profession which will assist investigators in their research. The center has endeavored to increase the number of research workers and technicians. In this respect progress is already to be noted, for in 1943 there were 450 research workers and 500 technicians, while in 1945 there were 750 and 970 respectively. The center has prepared plans for research and the building of new laboratories, established a scientific mission to Germany which will deal with the German scientific problem and return to France the appliances seized by the Germans. The center aims to establish close relations between it and the "departments" for research existing in the various ministries. With this in view the Superior Council of Colonial Research and the committee of coordination of research relating to the national defense have been created. There is a special course for young research workers, which consists in visiting laboratories of a given specialty, the following of specialized lectures at the university and, during the second year, working in laboratories abroad. The budget for scientific research, which amounted to 250,000,000 francs in 1945 (three times more than in 1944), will be half a million francs in 1946. Joliot-Curie proposed the organization of a national center for technical research and subsequently the creation of an office or of a ministry for scientific research. He emphasized that scientists must have control over the use of their own inventions. He recommended the creation of a "council of utilization" for relations between nations.

Persisting Bone Disease Through Calcium Deficiency

By the end of 1941 warning had been given by French doctors and research workers regarding the deficiency of calcium, phosphorus and vitamin D in the food of the population and the serious consequences which would result. They made several practical recommendations, but the Vichy government ignored this danger. In 1943 and 1944 and recently in his lecture before the Congress for the Advancement of Science, Justin Besançon has, with others, stressed the persistence of bone disease. The cases especially under consideration were Milkman's syndrome, symmetrical fissures and fractures and spinal osteoporosis, a coarse type of osteomalacia of two forms: (1) pain in the low

lumbar region with sacral and femoral irradiations (patients come to be treated for pains presumed by them to be rheumatism); (2) kyphoscoliotic forms with heaping up of vertebrae and diminutions of height by 10 to 15 cm. In a hospital ward and in private practice Coste and Berger found 3 cases of bone disease in 1940, 5 cases in 1941, 8 cases in 1942, 24 cases in 1943 and 51 cases in 1944. Besançon contends that this phenomenon still shows a tendency to increase. Among Coste and Berger's patients 85 per cent are over 60 years of age and 62 per cent are women. Senility and the menopause play an important part in decalcification. The authors remark that, even after the liberation, a deficit of 1 Gm. a day of calcium still exists. This deficiency of calcium, persisting for years, should result in a complete decalcification of the skeleton, but most of the undernourished bodies adapt themselves to this calcium deficiency. The authors gave their patients 3 Gm. of calcium phosphate by mouth, adding to it, three times a week, 15 mg. (60,000 international units) of vitamin D. Because of shock and tissue reactions due to the impurity of the manufactured calcium gluconate, they did not give calcium intravenously. In several instances the treatment resulted in a partial or total failure.

PREVENTIVE MEASURES

In order to prevent these deficiency diseases, the Academy of Medicine has proposed to the Food Ministry that calcium be added to the bread. Since 1942 in Britain, 0.35 Gm. of calcium carbonate has been added to 300 Gm. of bread; in France, where milk for adults is scarce the addition of calcium ought to be greater. Furthermore, because of the free sale of bread, its consumption has increased and consequently the calcium deficiency should be attenuated. In one of the last meetings of the Academy of Medicine Professor Lesne reported progress in the distribution of milk to children. Henceforth, in most of the large cities, children up to 18 months of age can have 1 liter instead of 750 cc. In various cities pasteurized milk is sold in 1 liter bottles; and in the last fourteen years pasteurization has increased considerably. There is a shortage of condensed milk for children.

PUERTO RICO

(From Our Regular Correspondent)

SAN JUAN, Dec. 23, 1945.

Annual Meeting of Puerto Rico Medical Association

The forty-second annual meeting of the Puerto Rico Medical Association was held for four days in December at San Juan. Prominent members of the American Medical Association visited the island as guests of the Puerto Rico association. Physicians from Canada, the Dominican Republic and Trinidad were also honor guests. Dr. Luis Manuel Morales of San Juan was elected president of the association for 1945-1946, with the following members as the board of directors: Dr. Julio A. Santos, vice president; Dr. Rafael A. Vilar, secretary; Dr. Ezequiel Prieto, treasurer; Dr. Carlos E. Muñoz MacCormick, speaker of the house of delegates, and Dr. José N. Gándara, delegate to the House of Delegates of the American Medical Association. At the building of the association a ceremony was held to dedicate the forty-second meeting of the association to the late Dr. Pedro Gutierrez Igaravides, prominent Puerto Rican scientist, who died in 1935.

The program included a series of conferences held at the School of Tropical Medicine in San Juan, with presentation of interesting cases by Drs. Ramón M. Suárez, Arturo L. Carrión, F. Hernández Morales, Caroline K. Pratt, Rex J. Bunker and Ramón M. Suárez Jr.; Treatment of Filarial Chyluria of Renal Origin, by Dr. Julio E. Colón; Use of the Skin Test in the Diagnosis of Schistosomiasis Mansoni, by Dr. J. Oliver González; Diagnosis of Schistosomiasis Mansoni by Biopsy of the Rectal Mucosa, by Drs. F. Hernández Morales and J. Maldonado; Treatment of Schistosomiasis Mansoni with Anthiomaline, by Drs. Federico Hernandez Morales, Ramón M. Suárez, Caroline K. Pratt and J. Oliver González, and Clinicopathologic Conference, by Drs. Franklin M. Hanger and Enrique Koppish.

The meeting also included a series of interesting conferences held at the building of the association presided over by Dr. Héctor A. Bladuell of San Juan and by Dr. Héctor Read Barreras of the School of Medicine of the Dominican Republic. The meeting adjourned with a banquet for members of the Puerto Rico Medical Association and honor guests.

BOLIVIA

(From Our Regular Correspondent)

LA PAZ, Nov. 12, 1945.

Incidence of Communicable Diseases

As the result of increasing airplane travel, every outbreak of communicable disease is of great practical interest, and preventive measures, to be effective, must be based on a rapid acknowledgment of an outbreak anywhere in the world. Here in Bolivia, the crossroad of several international air lines, several epidemic diseases have been reported during the seven month period April through October, according to figures from the National Health Department.

A fairly large incidence of bubonic plague was registered during April in the town of Vallegrande, where isolated cases have been found for years. There were 65 known cases and 34 deaths attributed to plague; a vaccine prepared by the bacteriologic institute at La Paz together with the isolation of the whole district proved to be effective in controlling the disease.

An outbreak of meningococcic meningitis occurred in and around the town of Cochabamba, an important center of communication, with its peak between June and August; there were 81 cases and 14 deaths (17.3 per cent) reported to the health authorities. The disease was spreading to other places, and by October 31 a total of 151 cases with 62 deaths had been reported from different districts of the country. Measures taken by the local health authorities were quick and efficient, while the help granted by the Servicio Cooperativo was limited to the provision of some thousands of sulfadiazine tablets.

Yellow fever, a serious menace only a few years ago, is a nearly unknown disease here now, thanks to the magnificent sanitation work performed by the Rockefeller Foundation. In a seven month period only 7 cases with 2 deaths were due to yellow fever.

Smallpox is still widespread, even though progress has been made as the result of obligatory vaccination. A total of 1,345 cases was reported during seven months, and a few cases occurred even in larger towns such as La Paz and Cochabamba.

Typhoid and parathyphoid fevers reached their peaks during April and during September and October; in the whole period there were 763 known cases with 171 deaths (22.4 per cent). Typhus became more frequent during the last two months, when 79 new cases were reported with 32 deaths. Only 38 cases with 18 deaths were reported during the previous five months.

Diphtheria was reported 291 times (49 deaths) and whooping cough 3,249 times (286 deaths). Not a single case of poliomyelitis was reported, and this disease remains practically unknown here. There were 200 cases of scarlet fever with 16 deaths, and 9 cases of acute epidemic encephalitis with 5 deaths.

Malaria is the number one health problem, and 10,032 new cases with a death rate of 108 were reported; there are probably many other people becoming infected every month who never seek medical aid and therefore are not recorded in any health statistics. A very promising malaria survey was started in May by the Servicio Cooperativo Interamericano de Salud

Pública with the aid of an American specialist, but that work was unfortunately discontinued. There is another such survey under way, sponsored by the Bolivian government.

The existing obligatory reporting system for communicable diseases, established in this country by executive order, has proved efficient, but any continuous organized interchange of epidemiologic informations with other republics of this continent does not exist at present. The work, promised by the Commission of Experts on Quarantine of the United Nations Relief and Rehabilitation Administration, is expected to be of great help.

BELGIUM

(From Our Regular Correspondent)

Nov. 10, 1945.

Poliomyelitis

Since the poliomyelitis epidemic which raged in Belgium this summer, several timely reports have been published on this subject. Kleyskens and Laruelle present several interesting opinions on the subject in the *Bruxelles médical*. The virus is widely distributed throughout the population during the epidemic. Only a small number of these carriers have the disease. The contamination by direct contact is relatively infrequent. The virus is located in the intestine and is found in the feces and in polluted water in the districts where the disease prevails. The contamination without doubt takes place through the drinking water and also perhaps through the nasal passages. Human poliomyelitis and encephalomyelitis of the mouse present great clinical, micropathologic, epidemiologic and immunologic similarities. The respective viruses have the same size and have common physicochemical properties. The comparative study of the two disorders supports the belief that poliomyelitis is caused by an intestinal infection with a pathogenic virus presenting a neurotropic character only under certain conditions. The effects of serotherapy remain doubtful, but the absence of other therapeutic means justifies its provisional utilization. On the other hand, the authors point out that in the present epidemic of poliomyelitis respiratory disturbances were of exceptional frequency and gravity. They believe that early diagnosis and analysis will permit differentiation between the spinal form and the bulbar form of this respiratory paralysis. The pathogenesis of these disturbances is equivocal. It implies, therefore, different therapy depending on the nature of the disorder.

The Professional Secret

The court of Liége has pronounced judgment in the case of a physician who was accused of violating a professional secret. The obligation of secrecy is so great that it is sanctioned in the penal code in order to protect the general interest and to give a guaranty for the confidence which the patient entrusts in his physician. Consequently the duty of secrecy must always exist excepting in the cases provided by law where the physician is not a person of confidence (legal physician). Even if the case is one of more or less public knowledge, it is not immaterial for the physician to support this knowledge by issuing statements which he possesses only by the virtue of the exercise of his profession. It is not the eventual damage to the patient which forms the basis for professional secrecy but rather consideration of the general good which demands that the secret be guaranteed. Even when a fact is known by the declaration or the agreement of physicians, the treating physician to whom the patient has made his confidences cannot be relieved of his obligation of secrecy. This is more peremptory when the agreement has not yet been established. It is not necessary that the appearing person has acted with bad intention in order that it be a violation of the professional secrecy. In the case under consideration the physician had spoken of the external wounds of his patient (this fact could be considered to a certain extent as of public knowledge) and had also made reflections on the patient's general condition. After having taken account of extenuating circumstances, the physician was sentenced conditionally to a fine (*Revue de droit pénal et de criminologie*, 19th year, No. 2, p. 324).

A History of Oppression

In a report which can serve as an example of the painful aspects of oppression, the *Bruxelles médical* published the following: "In April 1943 a plan was developed to prevent the next deportation of Jews from Belgium to Germany. It was submitted to the national commander of the Army of Partisans, who, according to the opinion of a special commission, was called on to study the undertaking, which was daring, perilous and practically impossible to execute. Dr. Youra Lifschitz, doctor of medicine at the University of Brussels, undertook the plan with his group of partisans. Several other accomplices were acquired, in particular railroad workers, who agreed to halt the train on signal. A Brussels doctor, Dr. Freddy Thys, kept himself in readiness to care for those who might be wounded.

The action was realized on April 19. In spite of heavy machine gun fire, the doors of several railroad cars were opened and hundreds of Jews included in this twentieth transport succeeded in escaping. When the convoy was again en route, numerous deportees made another effort to flee between Louvain and Tirlemont. There were about 60 dead and several dozen wounded. The Gestapo retook 7 and confined them to the guard of the director of the hospital of Tirlemont.

A new action was decided on with the view of saving them, this time in accord with the national commander of the Army of Partisans. Two vehicles were sent to Brussels so that freeing of the injured could be effected. An agent provocateur had unfortunately slipped into the group and had alerted the German police. At their return, the latter had laid an ambush. A lively engagement took place and several field gendarmes were killed. The Partisans were able to save themselves, but the injured who had been liberated were retaken and later deported. Dr. Thys was condemned to death for his intervention in this "act of terrorism"; his execution was suspended but he was deported to Germany. He has returned to Brussels, fortunately in good health, and has taken up his medical activities.

Dr. Youra Lifschitz was shot after having been tortured at Breendonck. He is buried at the side of his brother, Choura, in Brussels.

Marriages

FREDERICK B. SPENCER JR., Salisbury, N. C., to Miss Ernestine Lewis, Tazewell, Va., in Richmond, Va., September 22.

JOHN ROBERT MASSIE JR., Perkinsville, Va., to Miss Emily Charlotte Taylor of Big Stone Gap, September 15.

JOHN GERARD MASTERSON, Brooklyn, to Miss Jeanne Ann O'Reilly of New Rochelle, N. Y., October 20.

HUGH B. MCMANUS JR., Fort Bliss, Texas, to Miss Jane Pieper of St. Louis, September 15.

JULIAN MENDEN, New York, to Miss Pauline F. Connor of Chicago in Paris, France, June 18.

PHILIP J. LAHEY JR., to Miss Marie Gertrude Fay, both of Worcester, Mass., September 8.

EDWIN BOOTH VADEN, Gretna, Va., to Miss Anne Funsten Rogers of Roanoke, August 25.

NORMAN G. LINTON, Jamestown, Ohio, to Miss Jane E. Compton of Dayton in October.

ROBERT D. MORETON, Temple, Texas, to Miss Alma Williamson of Eastland, September 21.

LEO MICHAEL SMITH to Miss Barbara M. Potts, both of Stamford, Conn., October 16.

HERVEY WINTHROP MEAD to Miss Alberta Allen, both of Atlanta, Ga., recently.

Deaths

Frank Watkins Weed ✠ Brigadier General, U. S. Army, retired, San Francisco; University of Maryland School of Medicine, Baltimore, 1903; Army Medical School in 1905 and Army War College in 1929; born in Baltimore April 12, 1881; joined and served as assistant surgeon with the Artillery Corps at Fort McHenry, Md., and at various stations in the Philippine Islands from May 1904 to the latter part of 1907; returned to the United States and served as surgeon at Field Hospital number 6, Pine Camp, N. Y., and later at Fort Totten, N. Y.; early in 1912 he again was stationed in the Philippine Islands and at Tientsin, China, until January 1915, when he returned to the United States, serving at Letterman General Hospital, San Francisco, until July 1916; served at various temporary stations until August 1918, when he was assigned as general sanitary inspector, Office of the Chief Surgeon, American Expeditionary Forces, until July 28, 1919; awarded the Distinguished Service Medal for his services during World War I; on his return to the United States served as district surgeon at El Paso, Texas, until August 1920 and as post surgeon at Fort Bliss, Texas, until July 1921; served as instructor, medical reserve units, 94th division, at Boston, as harbor defense surgeon at Fort Mills, P. I., as commanding officer at Sternberg General Hospital in Manila, P. I., as post surgeon and professor, department of military hygiene, United States Military Academy at West Point, N. Y., and as surgeon, second corps area, at Governors Island, N. Y.; promoted to lieutenant colonel in 1919, colonel in 1930 and brigadier general in 1942; fellow of the American College of Surgeons; at one time assistant and later editor in chief, Medical Department of the United States Army, in the World War; served as commanding officer of the Letterman General Hospital, where he died September 29, aged 64, of cachexia and exhaustion.

John Douglas McLean ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1894; born in Norristown, Pa., Oct. 19, 1870;; member of the House of Delegates of the American Medical Association from 1917 to 1922 and in 1924; past president of the Philadelphia County Medical Society, American Hospital Association, Medical Club of Philadelphia and the Sydenham Medical Coterie; during World War I attached to the Surgeon General's Office in Washington, in charge of physicians' war assignments; discharged from service as lieutenant colonel; chairman of the local selective service board number 27 from 1940 to 1945; deputy commissioner of health of the commonwealth of Pennsylvania from 1919 to 1923; member of the board of health of the city of Philadelphia; treasurer of the Philadelphia Institute for Medical Research at the Philadelphia General Hospital, where he had been chief of staff and later consultant on the tuberculosis service; since 1898 on the staff and since 1928 medical director and superintendent of the Rush Hospital for Consumption and Allied Diseases and its country branch at Malvern, Pa.; died November 10, aged 75, of bronchopneumonia secondary to carcinoma of the pharynx.

Frank Adelbert Bien ✠ Irvington, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1917; born in Newark, N. J., March 14, 1890; also a graduate in pharmacy; interned at the Metropolitan Hospital, Department of Public Charities, New York; first lieutenant, medical corps of the U. S. Army, World War I, serving as commander of Base Hospital number 73 at Camp Greenleaf, Ga.; fellow of the American College of Surgeons; attending surgeon at the Irvington General Hospital in Irvington; affiliated with the Presbyterian and St. Michael's hospitals in Newark and East Orange General Hospital in East Orange; during World War II served on the Civilian Defense Council and Irvington Chapter of American Red Cross; in 1935 served in the New Jersey state assembly; died October 19, aged 55, following an operation for lung abscess.

George Jesse Wright ✠ Pittsburgh; University of Pennsylvania Department of Medicine, Philadelphia, 1904; born in Pittsburgh June 1, 1880; professor of neurology at the University of Pittsburgh School of Medicine; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Neurological Association, American Psychiatric Association and the Association for Research in Nervous and Mental Disease; fellow of the American College of Physicians; served as president of the Pennsylvania Psychiatric Society; neurologist, St. Margaret Memorial, Mercy, St. Francis, Elizabeth Steel Magee and Allegheny General hospitals and St. Joseph's Hospital and Dispensary; died in the Toronto General Hospital, Toronto, Ont., Canada October 1, aged 65, of nephritis.

Douglas Hamilton Mebane ✠ Colonel, U. S. Army, retired, Washington, D. C.; University of Texas School of Medicine, Galveston, 1916; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians and the American College of Surgeons; served during World War I; entered the medical corps of the U. S. Army as a first lieutenant in 1917; promoted through the various ranks to that of colonel; retired July 31, 1943 because of age; died in the Brooke General Hospital, Fort Sam Houston, Texas, Nov. 12, 1943, aged 56, of bronchopneumonia and arteriosclerosis.

George A. Allison, Cleveland Heights, Ohio; Western Reserve University Medical Department, Cleveland, 1895; on the medical staff of the Fisher Aircraft Plant number 1 in Cleveland during World War II; formerly examiner for the Baltimore and Ohio Railroad; died in the University Hospital, Cleveland, October 5, aged 74, of cerebral embolism.

Elizabeth S. Jarrett Anderson, Ardmore, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1898; at one time on the staff of the Norristown (Pa.) State Hospital; died September 2, aged 68, of coronary thrombosis.

Peyton Fortine Anderson, New York; New York Homeopathic Medical College and Flower Hospital, New York, 1913; associate visiting physician at the Sea View and the Harlem hospitals; vice chairman of the Harlem committee, New York Tuberculosis and Health Association; chairman of the board of managers of the Harlem Branch of the Y. M. C. A.; died October 10, aged 54, of heart disease.

Lasar Noah Andres ✠ New York; Northwestern University Medical School, Chicago, 1911; specialist certified by the American Board of Otolaryngology; served during World War I; on the staff of the Manhattan Eye, Ear, Nose and Throat Hospital; died October 15, aged 63, of coronary occlusion.

Ray Beardsley, Binghamton, N. Y.; Long Island College Hospital, Brooklyn, 1895; member of the American Medical Association; once president, secretary and treasurer of the Broome County Medical Society; served as city physician; died September 7, aged 80, of arteriosclerotic heart disease.

Adolphus Lyman Biggs, Dayton, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; member of the American Medical Association; died in the Good Samaritan Hospital September 24, aged 63, of coronary occlusion.

Pat Biscoe, Houston, Texas; University of Arkansas School of Medicine, Little Rock, 1926; member of the American Medical Association; interned at the Hotel Dieu Hospital in New Orleans; formerly resident physician at the International and Great Northern Railroad Employees' Hospital in Palestine; member of the staff as associate surgeon at St. Joseph's Infirmary; died October 16, aged 49, of coronary occlusion.

Carl Gottlieb Bretthauer ✠ Los Angeles; State University of Iowa College of Medicine, Iowa City, 1920; died in Santa Monica September 21, aged 50, of cerebral hemorrhage.

Francis Sidney Brodrick, Boston; Detroit College of Medicine, 1895; member of the American Medical Association; served as assistant superintendent of the Boston City Hospital; died in Waltham, Mass., September 11, aged 78, of coronary thrombosis.

John Francis R. Brubaker ✠ Hubbard, Iowa; College of Physicians and Surgeons, Baltimore, 1885; member of the school board; died October 11, aged 86, of senility.

Clarence Walter Byers, Rutherford, N. J.; Long Island College Hospital, Brooklyn, 1902; served as examining physician for the city draft board number 16; president of the board of health, police surgeon and lieutenant in the New York National Guard; past president of the Rotary Club; for many years affiliated with the Holy Name Hospital, Teaneck, where he died October 25, aged 67, of Parkinson's disease.

Philip L. Cain, Albany, Okla. (licensed in Oklahoma under the Act of 1908); member of the American Medical Association; died August 21, aged 84.

Julian H. Chandler, Swainsboro, Ga.; University of Georgia Medical Department, Augusta, 1901; member of the American Medical Association; died August 20, aged 66.

Edwin W. Coffey, Shreveport, La.; College of Physicians and Surgeons, Dallas, Texas, 1908; died September 25, aged 68.

John McGrath Collins ✠ San Francisco; Creighton University School of Medicine, Omaha, 1935; also a graduate in pharmacy; interned at the Southern Pacific General Hospital; later served a residency at St. Francis Hospital, with which institution he was closely connected and where he died September 2, aged 36, of miliary tuberculosis.

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John Leader Corish, Richmond Hill, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; died September 28, aged 80.

Thomas E. Courtney ✠ Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1892; formerly on the faculty of his alma mater; at one time police surgeon and member of the city board of health; examined army recruits during World War I; on the staffs of St. Francis Hospital, City Hospital, Methodist Hospital and St. Vincent's Hospital, where he died September 27, aged 77, of coronary thrombosis.

George William Dickey, Westville, Okla.; Tennessee Medical College, Knoxville, 1904; died August 18, aged 64, of cerebral hemorrhage.

Benjamin Roscoe Dodd, Wake Forest, N. C.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1925; died in Lenoir recently, aged 46, of coronary thrombosis.

Green Berry Dorrell, Tulsa, Okla.; Bellevue Hospital Medical College, New York, 1889; died in the Hillcrest Hospital September 3, aged 83, of angina pectoris and generalized arteriosclerosis.

Edwin T. Ealy ✠ Barnesboro, Pa.; Chicago College of Medicine and Surgery, 1906; served as a member of the Barnesboro Council; died September 27, aged 70, of coronary thrombosis.

William Banks Fuller, Oklahoma City, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1923; died in St. Anthony Hospital August 8, aged 47, of cerebral hemorrhage.

Richard Burtch Gannon, Gary, Ind.; Loyola University School of Medicine, Chicago, 1937; member of the American Medical Association; interned at the Mercy Hospital in Chicago; on the staffs of the Methodist Hospital and St. Mary's Mercy Hospital, where he died September 20, aged 41, of acute myelogenous leukemia.

Milton Adolph Gershel ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1900; for many years physician for the Hebrew Sheltering Guardian Society Orphan Asylum at Pleasantville, N. Y.; died September 7, aged 70.

Thomas Byron Gold, Shelby, N. C.; North Carolina Medical College, Charlotte, 1911; member of the American Medical Association; awarded the Congressional Medal of Honor, the Distinguished Service Cross and the Croix de Guerre for services during World War I; served as chairman of the school and draft boards; on the staff of the Shelby Hospital; died September 28, aged 57, of cerebral hemorrhage.

William L. Gravlee, Orange City, Fla.; University of Nashville Medical Department, 1882; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; died September 23, aged 86, of carcinoma of the right hand.

Thomas Hardie Hawkins, Nashville, Tenn.; University of Nashville Medical Department and Vanderbilt University School of Medicine, Nashville, 1891; died in the Central State Hospital September 25, aged 74, of myocardial degeneration.

Ralph Ernest Dudley Hawley, St. Clair Shores, Mich.; University of Michigan Medical School, Ann Arbor, 1920; member of the American Medical Association; died in St. Mary's Hospital, Grand Rapids, September 21, aged 69, of atypical virus pneumonia.

Rosser Noland Hillsman Jr. ✠ Bon Air, Va.; University of Virginia Department of Medicine, Charlottesville, 1933; died in Lynchburg August 31, aged 37, of nephritis.

Harvey Elmer Hoffman, Ludington, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1890; served for many years as health officer of Ludington and as president of the board of education; a member of the local draft board, serving as examining physician during World War I; on the staff of the Paulina Stearns Hospital; died September 5, aged 78, of carcinoma.

Emil John Hoglund, Oak Park, Ill.; Northwestern University Medical School, Chicago, 1905; served during World War I; served on the staffs of the Illinois Central and Augustana hospitals and the Home for Destitute Crippled Children in Chicago; died September 27, aged 75, of heart disease.

Bradley Hartman Hoke, Meyersdale, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1901; member of the American Medical Association; secretary of the Somerset County Medical Society; served during World War I; died in the Memorial Hospital, Cumberland, Md., August 22, aged 73, of uremia following a prostatectomy.

Park Rowe Hoyt, Laconia, N. H.; Dartmouth Medical School, Hanover, 1906; member of the American Medical Association; served during World War I; died August 31, aged 63.

Heman Humphrey ✠ Louisville, Ky.; University of Louisville Medical Department, 1904; formerly adjunct professor of anatomy at his alma mater; physician for the Louisville Gas and Electric Company, Kentucky and Indiana Terminal Railroad and the Louisville Water Company; died September 3, aged 65, of hypertensive heart disease.

Burdette Elmerin La Due, Sterling, Ill.; Rush Medical College, Chicago, 1885; died September 9, aged 92, of arteriosclerosis and uremia.

John Francis Lambert, Newark, N. J.; Baltimore Medical College, 1903; died in St. Michael's Hospital September 12, aged 66, of cardiac failure and arteriosclerosis.

Tom Lowry ✠ Oklahoma City; University of Oklahoma School of Medicine, Oklahoma City, 1916; dean and professor of clinical medicine at his alma mater; specialist certified by the American Board of Internal Medicine; past president of the Oklahoma County Medical Society; fellow of the American College of Physicians; served in France during World War I; on the staffs of St. Anthony and University hospitals; died December 11, aged 54, of coronary thrombosis.

William Nicholas Maloney, Cape Vincent, N. Y.; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; past president of the Jefferson County Medical Society; for many years health officer; served during World War I; on the staffs of the Mercy Hospital and the House of the Good Samaritan in Watertown, where he died September 4, aged 73, of uremia.

John Harold Mansfeldt ✠ San Francisco; Stanford University School of Medicine, San Francisco, 1927; began active duty as a captain in the medical corps, Army of the United States, on Sept. 20, 1942; relieved from active duty on May 23, 1943; died in Shelter Cove, October 4, aged 48.

Charles Steim McGivern, Margate City, N. J.; Medico-Chirurgical College of Philadelphia, 1912; specialist certified by the American Board of Otolaryngology; died September 14, aged 60, of cerebral hemorrhage and old coronary thrombosis.

Thomas Theodore McKinney, Denver; Meharry Medical College, Nashville, Tenn., 1895; served on the staff of the Denver General Hospital; died August 7, aged 75, of hemiplegia.

Edward V. Milholland, Baltimore; University of Maryland School of Medicine, Baltimore, 1895; medical and surgical director of the Baltimore and Ohio Railroad; died in the University Hospital September 11, aged 71, of acute genitourinary infection and chronic cardiovascular disease.

John H. Newth, Pittston, Pa.; College of Physicians and Surgeons, Baltimore, 1896; died August 3, aged 72, of carcinoma of the stomach.

Horace Poirier, Salem, Mass.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1902; member of the American Medical Association; president of the Essex South District Medical Society, 1939-1940, and nominating councilor from 1940 to 1941; since 1927 on the regular medical staff of the Salem Hospital, where he had been chief of obstetrics; member of the chamber of commerce; died in Conway, N. H., August 14, aged 67, of coronary occlusion.

David Phillips Pruett, Newton, Ala.; Medical College of Alabama, Mobile, 1906; member of the American Medical Association; died September 8, aged 63, of paralysis agitans.

Milton Rice, Hilo, Hawaii; Hering Medical College, Chicago, 1895; on the staff of the Hilo Memorial Hospital; for many years an officer of the chamber of commerce; president of the board of trustees of the public library; died September 19, aged 81.

William Eugene Rink, Burlington, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1903; served overseas during World War I; member of the board of health of Burlington; on the courtesy staffs of Zurbrugg Memorial Hospital, Riverside, and the Burlington County Hospital in Mount Holly; died September 26, aged 65, of carcinoma of the bladder.

Daniel Lee Rogers, Bolton Landing, N. Y.; University of Vermont College of Medicine, Burlington, 1886; member of the American Medical Association; served as health officer and county coroner; on the staff of the Glens Falls (N. Y.) Hospital; died in the New England Baptist Hospital, Boston, September 11, aged 83, of carcinoma.

Franklin Henry Rosebrough ✠ San Antonio, Texas; St. Louis University School of Medicine, 1904; member of the American Academy of Ophthalmology and Otolaryngology; on the staffs of the Medical and Surgical Memorial Hospital and the Nix Hospital; specialist certified by the American Board of Ophthalmology; died September 16, aged 67, of heart disease.

Samuel Fellows Round ✠ Braddock, Pa.; University of Pittsburgh School of Medicine, 1921; interned at St. Francis Hospital, Pittsburgh;; died September 8, aged 49, of hypostatic pneumonia and acute hepatitis.

Harry William Routledge ✠ Birmingham, Ala.; University of Louisville School of Medicine, Louisville, Ky., 1928; interned at the Hillman Hospital and the Norwood Hospital, where he died August 5, aged 40, of heart disease.

Eugene Boutelle Sanger, Bangor, Maine; Columbia University College of Physicians and Surgeons, New York, 1894; honorary member of the Maine Medical Association; member of the American Medical Association; fellow of the American College of Surgeons; on the staff of the Eastern Maine General Hospital; died September 11, aged 74, of cerebral hemorrhage.

Nicholas Schilling ✠ New Hampton, Iowa; John A. Creighton Medical College, Omaha, 1896; past president of the Chickasaw County Medical Society; fellow of the American College of Surgeons; served on the staff of St. Joseph's Hospital, where he died September 2, aged 77, of cystitis.

Homer Talmadge Scott, Cowpens, S. C.; Atlanta College of Physicians and Surgeons, 1912; died September 1, aged 59, of coronary disease.

Harold Waldron Seff, Delaware, Ohio; General Medical College, Chicago, 1924; city and county health commissioner; for two years with the Chicago Health Department; in 1929 and 1930 in public health work in Cleveland and later associated with the state department of health; died August 21, aged 55.

Owen Malcom Shreve ✠ Erie, Pa.; University of Buffalo School of Medicine, 1892; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; for many years on the staff of St. Vincent's Hospital; died September 7, aged 84, of myocardial failure.

Jules J. Siffer, Monroe, Mich.; Detroit College of Medicine, 1901; member of the American Medical Association; formerly city commissioner; at various times health officer; one of the founders of the Mercy Hospital, where he served as chief of staff; died in St. Vincent's Hospital, Toledo, September 13, aged 67, of pneumonia.

John Gorse Simmons ✠ New York; College of Physicians and Surgeons, Baltimore, 1891; served on the staffs of the Bronx Eye and Ear Infirmary and the New York Post-Graduate Medical School and Hospital; died in the Fordham Hospital September 28, aged 77, of arteriosclerotic heart disease.

Harry Jerome Smejkal, Chicago; Dearborn Medical College, Chicago, 1907; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; died in the Hospital of St. Anthony de Padua October 3, aged 63, in a diabetic coma and of carcinoma of the submaxillary gland.

Martin Luther Steele, McComas, W. Va.; Bennett Medical College, Chicago, 1914; died suddenly, September 19, aged 70, of coronary thrombosis.

FRED JAMES BLACK
Surg., U. S. P. H. S., 1905-1944

George Charles Stoll, Niagara Falls, N. Y.; University of Buffalo School of Medicine, 1929; member of the Amercan Medical Association and the Niagara Falls Academy of Medicine; secretary-treasurer of the Niagara County Medical Society; interned at Buffalo General Hospital; served a residency at the Children's Hospital in Buffalo; on the staffs of the Mount St. Mary's and Memorial hospitals; died September 27, aged 40, of coronary thrombosis.

Wesley M. Stone, Dobson, N. C.; Davidson School of Medicine, 1906; honorary member of the Hugh Chatham Memorial Hospital in Elkin; died September 27, aged 73.

Opie William Swope ✠ Wichita, Kan.; Maryland Medical College, Baltimore, 1905; specialist certified by the American Board of Radiology, Inc.; member of the Radiological Society of North America, Inc., and the American College of Radiology; staff member and radiologist to the Grace and St. Elizabeth Mercy hospitals, Hutchinson; member of the staff of the Sedgwick County Hospital and the Wichita Hospital, where he died December 12, aged 64, of diabetes mellitus complicated by cerebral hemorrhage.

Walter Lorenzo Taft, St. Cloud, Minn.; Marquette University School of Medicine, Milwaukee, 1913; for a number of years a patient in the Veterans Administration Facility, where he died September 10, aged 62, of bilateral bronchopneumonia.

Isaiah Ulysses Temple, Pendleton, Ore.; University Medical College of Kansas City, Mo., 1898; for many years associated with the Indian Service; formerly city health officer; died in St. Anthony's Hospital, August 29, aged 77.

Thorvald Martinius Thorkelsen, Minneapolis; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1902; died in Robbinsdale September 20, aged 76, of coronary thrombosis.

Gilbert Dillon Waite, Portsmouth, Ohio; Rush Medical College, Chicago, 1918; member of the American Medical Association; served as chief of the Mercy Hospital; found dead September 29, aged 51.

Carl Watson, Findlay, Ohio; Cleveland Homeopathic Medical College, 1901; captain, medical corps, U. S. Army during World War I; active in Democratic politics for twenty-five years, serving as chairman of the Hancock County Executive Committee and in 1933-1934 as state chairman; formerly works progress administrator; died August 17, aged 68.

Clara B. Woodward, Evanston, Ill.; Jenner Medical College, Chicago, 1910; died in the Presbyterian Home October 19, aged 76, of carcinoma of the uterus.

Clarence Field Worthen, Boston; Harvard Medical School, Boston, 1908; member of the American Medical Association and the New England Ophthalmological Society; ophthalmic surgeon at the Massachusetts Eye and Ear Infirmary, Boston, oculist at the House of Mercy Hospital, Pittsfield, and ophthalmologist at the Newton Hospital, Newton, Mass.; died in Braintree August 22, aged 65, of hypertensive heart disease.

PUBLIC HEALTH SERVICE

Fred James Black ✠ Surgeon, U. S. Public Health Service, Federal Security Agency, Manila, P. I.; University of Michigan Medical School, Ann Arbor, 1932; served his first year's internship in the U. S. Marine Hospital at Norfolk, Va., and a second year's internship in the U. S. Marine Hospital in Detroit; in June 1937 commissioned an assistant surgeon in the regular corps of the public health service and detailed to the U. S. Quarantine Station, Gallops Island, Boston; in November 1937 assigned to the U. S. Marine Hospital in Memphis; on July 16, 1938 promoted to passed assistant surgeon and in 1939 assigned to the U. S. Marine Hospital in Baltimore; ordered to Manila on Aug. 1, 1940; early in 1942 officially detailed to the U. S. Army Medical Department at the request of General MacArthur; on April 1, 1943, while a prisoner of the Japanese, promoted to the rank of surgeon; on duty in Manila, was one of six public health officers in the Philippines who voluntarily offered their services to General MacArthur when the islands were invaded; subsequently assigned to a Bataan field hospital and was taken prisoner when Corregidor fell to the Japanese; killed in action in the China Sea Oct. 24, 1944, aged 39, when a Japanese prisoner of war ship, with 1,775 prisoners of war aboard, was sunk by submarine action 200 miles from the Chinese coast.

Correspondence

STATISTICS ON DIABETES IN INDUCTEES

To the Editor:—Spellberg and Leff in THE JOURNAL, Sept. 22, 1945, reported the incidence of diabetes mellitus and glycosuria among 32,033 consecutive selectees aged 18 to 35 who were "processed" at the New Orleans induction station. Only 37 instances of glycosuria were found (1.15 per thousand), of which a mere 9 proved to be diabetic (0.3 per thousand). They point out that their figures are much lower than the figures from the Boston induction center, where Blotner and Hyde (THE JOURNAL, June 12, 1943, p. 432; *New England J. Med.* **229**:885 [Dec. 9] 1943) found 367 cases of glycosuria among 45,650 selectees (8 per thousand), of whom more than half, or 208, had diabetes (4.5 per thousand). They ask "Why is there so much discrepancy between our findings and those of the New England workers?" and then attempt to find the answer in age, race and geography.

Neither of the reports as published supplies a full and complete description of the inductee groups under analysis. Were all draft-eligible males in the respective geographic areas recipients of a careful physical examination including a urine analysis at their community Selective Service offices prior to reporting to the regional induction centers? If so, this prior examination would have weeded out most of those having diabetes mellitus and renal glycosuria. The incidence of these conditions among the inductees would then not be representative for the respective regions of the country but solely for selected populations of men pronounced healthy by medical check-ups performed in the preceding few weeks. Were this true, the discrepancies would reflect gravely on the skill of New England doctors!

More likely the proportion of selectees given preinduction medical examinations, and the percentage of these tested by urine analysis, must have been lower in the Boston area in 1943 than in the New Orleans area in 1945. To a speculative reader this consideration would seem of major importance in producing the differences between the two sets of data.

In passing we may be reminded that the absence of a positive sugar reaction from a random single specimen of urine is not an absolute criterion for ruling out diabetes or other forms of melituria.

Authors and editors, in papers statistical,
Should always publish all data applicable!

IRVING J. WOLMAN, M.D., Philadelphia.

CHRONIC ONYCHOMYCOSIS

To the Editor:—In a communication to THE JOURNAL, July 7, 1945 (p. 750), it should have been less equivocally stated that an operation for permanent ablation of the nails in chronic onychomycosis is recommended only in toe infections. Moreover, less radical measures are permissible in toe cases if the infection is relatively superficial or involves only the distal portion of the nail. Characteristically, however, these cases present themselves with the nail or nails wholly involved. The case cited by Dr. Montgomery (THE JOURNAL, Oct. 27, 1945, p. 647) in which 7 of 9 infected toe nails in a single patient were cured by conservative measures cannot realistically be considered a cure either by patient or by physician, since a single infected nail will sustain activity in the concomitant epidermophytosis and will in due course reinfect the "cured" nails. It may be emphasized that patients treated by permanent nail ablation were completely cured of the skin involvement. It now seems evident that a high percentage of chronic, recurring or relapsing cases of epidermophytosis and the epidermophytidides, competently treated without permanent success, are actually in a state of continuous or intermittent exacerbation by unrecognized or undertreated toe nail infection.

With respect to freezing of skin lesions by ethyl chloride, failure to effect cure in cases which have come to my attention has been due to insufficient refrigeration. The original technic (*South. M. J.* **23**:1128 [Dec. 12] 1930) called for daily freezing of thirty to sixty seconds duration. Timing should begin after the skin has become white. The frozen zone should extend not less than 0.5 cm. beyond the known border of infection. Six to ten or more daily applications may be required. Some recent papers have advocated daily freezing only to the extent of producing the white flare. This is not adequate therapy for many chronic infections.

The singular and very rare instances in which this treatment is not effective are those of massive plantar hyperkeratosis with a centimeter or more of coriaceous epidermis interposed between the physical agent and the infecting organism. These cases require extensive and repeated chemical and surgical "peeling" before freezing may become effective.

Properly used, refrigeration gives results as favorable as one can expect of a therapeutic agent in any field; it seems definitely superior to other physical or chemical applications.

K. P. A. TAYLOR, M.D., Clearwater, Fla.

HERNIATION OF FASCIAL FAT AND LOW BACK PAIN

To the Editor:—In the article by Herz in THE JOURNAL, July 28, 1945, he states that "the literature and anatomy textbooks were searched for an adequate explanation of the clinical results, but none was found until the article by Copeland and Ackerman appeared." The latter authors (*Quart. J. Med.* **13**:35 [April-July] 1944) "believe that the ground covered by this study has not been systematically explored. The work has been carried out during active service in an area in which the impossibility of access to medical literature explains the lack of references to any relevant papers."

I am willing to agree that Copeland and Ackerman may not have had access to the literature, under their circumstances, but it seems that Herz, in Cleveland, should have referred to the *Quarterly Cumulative Index Medicus*, volume 22, 1937, and here under "lipoma and E. Ries (Chicago)" one is referred to the *American Journal of Obstetrics and Gynecology* **34**:490-494 (Sept.) 1937. In this article, written over eight years ago, it will be found that the gross and microscopic findings are described, that the frequency in 1,000 cases is given, that herniation of the fatty tumors through the fascia is relatively infrequent and that symptoms may not be present at all.

Philip Lewin, in his book entitled "Backache and Sciatic Neuritis," page 617, published by Lea & Febiger in 1943, also mentions these episacroiliac lipomas and the work that we have done.

RICHARD A. LIFVENDAHL, M.D., Chicago.
University of Illinois College of Medicine
and the Swedish Covenant Hospital.

BLOOD TYPING

To the Editor:—In Dr. Harville's article on cord transfusions (THE JOURNAL, Nov. 17, 1945, p. 801) is found the statement that the blood group of the father was type O, of the mother type AB and of the child type O. According to the accepted theory of Bernstein of the heredity of the blood groups, this is impossible. One of his fundamental laws is that an AB parent cannot have an O child. While this statement is not important in the otherwise excellent article, it could be of very great importance when used by a lawyer or an expert testifying in cases of disputed paternity or maternity. A few

instances like this would have the same weight in court as a hundred thousand correct findings. Since this was a side issue in the article, the various blood groups have not been carefully studied and checked. In Wiener's book on "Blood Groups and Transfusion," he states that any apparent exception to Bernstein's theory should be analyzed in the following way: 1. Complete examination of cells and serum, with several sets of reagents. 2. Examination of specimens taken at different intervals, especially of infants whose blood groups may not be fully developed. 3. Confirmation by workers with great experience. 4. Determination of the subgroup of any group A or group AB bloods in question. 5. Complete study of the family. Since this family is in New York State and there are mother, father and five children to study, this should be done and the results of the study published in THE JOURNAL.

JAMES D. EDGAR, M.D., San Diego, Calif.

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are abstracts of three such fraud orders:

Brother W. Thompson-El.—From Philadelphia this person sold through the mails a booklet entitled "The Key to Retaining Eye Vision," in which he referred to himself as author and as "Minister of Islam." The booklet advertised, "Age does not matter and you are not taking chances, for it is Nature's own way of preserving eyesight. . . . If there are cataracts on the eyes, they are relieved. . . . No glasses or medicine required! REMEMBER, glasses are only crutches for the eyes. . . ." A customer who ordered the booklet for $3 found that it consisted of 15 printed pages containing many quotations from the Bible and the Koran, and referred to the author as a "Divine Minister." The system of eye treatment that it presented recommended exposing the eyes to the sun as much as possible, looking at its rays in the morning "just a little at a time" and repeating this process "fifteen minutes two times a day the first two weeks" and gradually increasing it to one hour two times a day, to the accompaniment of sun baths. This, the "Brother" claimed, would bring the eyes to their natural strength, the required time depending on age, the condition of the eyes at starting treatment and general health. Meantime the patient could gradually discard his glasses, if any. As for cataract, it was claimed that "constant sunbath will remove it, but you must start in a little at a time . . . generally, it requires two or three years." In view of the foregoing, it is not surprising that the Post Office Department, after investigating this business, notified Brother W. Thompson-El to show cause why a fraud order should not be issued against him. He made no appearance at the hearing held in Washington Dec. 6, 1943, but was represented by counsel. A Senior Medical Officer of the Food and Drug Administration, who was qualified as a government witness from the standpoint of education and experience, testified that in his years of practice he had studied and treated eye disorders; that these arise from many causes and are not amenable to any single treatment; that when due to systemic diseases they should be treated according to their causes; that in most cases of defective vision due to the formation of the eyes, glasses are required as a correction; that cataracts occur more frequently in persons whose eyes are exposed to constant light or heat than others, and are more prevalent among persons living in desert areas affording almost constant glare from the sun than those in other sections. Further, he testified that, in his opinion, the treatment in question would not cure any disease or condition of the eyes, that the recommended use of sunlight was grossly unscientific and could be harmful or dangerous, and might even result in permanent blindness due to irritation if the treatment were regularly followed. The defense attorney presented no testimony and, though given until Jan. 12, 1944, to submit whatever brief, argument or proposed finding of fact and of law he might desire, he merely replied on Jan. 10, 1944, that no brief would be filed. Accordingly, the business was declared to be a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, in violation of the federal laws, and a fraud order was issued May 16, 1944, debarring Brother W. Thompson-El from further use of the mails.

Kolontone Company.—A Los Angeles chiropractor, one W. H. Graves, operated this concern, also doing business simply as "Kolontone" and "Kolonculture." Possibly he is the same W. H. Graves who has conducted "health columns" in at least two Hollywood publications of the "health-fads" type. Originally, the chiropractor sold through the mails a treatment composed of two products, "Mucelim" and "Acidophilus," and in 1941, when the Post Office Department ordered him to show cause why a fraud order should not be issued against his enterprise because of false and fraudulent representations that he was making for his nostrums, he signed an affidavit to discontinue the business, with the provision that a fraud order should be issued against it if it were ever resumed. About two years later the Post Office Department obtained evidence that Graves was still operating the scheme but using the new names given above, and he was again ordered to show cause by a certain date why he should not be debarred from the mails because of fraud. At the hearing of the case a chemist testified for the government that Kolontone was a brown watery solution containing, per 100 cc., 0.04 gram of calcium chloride, 0.24 gram of ferrous sulfate, 0.11 gram of sodium chloride and 12 grams of glycerin, with a trace of carbonate and some protein digestives. The directions were to mix 1 ounce of Kolontone with 1½ pints of warm water and allow it to run into the colon following an enema, once a day "until all mucus, putrid gas-forming matter or dark fecal impactions and bad odors will have been eliminated." In addition, "to help maintain normal chemistry of the colon, to help control the putrefactive bacteria and to aid good bowel action in the future, several bottles of Kolonculture should be implanted in the colon at the conclusion of the Kolontone cleansing." A qualified bacteriologist testified for the government that microscopic analysis had shown the presence of bacillus acidophilus in Kolonculture, described as "a gold-colored fluid." An expert medical witness for the government testified on the types of colitis, stating that it is a dangerous affliction which may vitally affect the health of the individual and in some cases even result in death, and that certain symptoms commonly attributed by lay persons to constipation may, on the contrary, be evidence of disorders much more serious. Hence the victim of colitis, instead of attempting to diagnose his condition and dose himself with "patent medicines," should have scientific treatment adapted to his individual needs. The witness further showed that Kolontone, when used as directed, had practically no other effect than an enema of warm water, and that Kolonculture, whether injected in the rectum or taken by mouth, would be of no benefit. The bacillus acidophilus that it contains, he stated, was only between $\frac{1}{50}$ and $\frac{1}{80}$ of the amount required for effective therapeutic use. In addition, he attested that the dietary suggestions sent out by Graves were unsuitable for indiscriminate use by any person suffering from colitis, since some of the foods recommended might contain altogether too much cellulose and roughage for such persons. Although W. H. Graves had made some reply by mail to the government's charges, neither he nor his counsel appeared at the hearing. The Post Office Department declared that the charges against Graves' concern were fully sustained by the evidence presented, and accordingly, on Oct. 5, 1944, issued a fraud order against Kolontone, Kolonculture and the Kolontone Company, debarring them from further use of the mails.

C. Frank Langley.—From Topeka, Kan., Langley promoted a mail-order scheme, selling under the name "Secrits" a series of formulas under the designations A, B, B1, C, D and E. These represented, respectively, a "cheap fluid that makes Varicoses feel normal"; "a cheap, powerful, harmless fluid that permanently Removes Cataracts and strengthens eyes"; a formula "for clearing and strengthening eyes"; one designated "cat, dog or monkey scratches or bites cured"; another, described as "deep wounds and running sores healed," and the last one, an alleged cure for granulated eyelids. Langley's "offer" included "all 6 above guaranteed money back for failures," and stated that he would furnish ingredients on request, at an extra charge. To a person who wrote Langley regarding a cataract for which an operation had been advised, he replied with a two-page letter written in longhand and a printed circular. The letter gave the assurance: "You order the Formula (B) Use it according to Directions, get the Cataract out of your Own Eye, and then you'll be like other People I've helped. . . . There is no Ingredient in (B) that shrinks the Cataract just enough to make it Brake Ez. Another Brakes it, and another Pushes it out of the Eyelids. Continued Use of (B) Heals, and Strengthens the Sight." In reply to another inquiry, Langley wrote in longhand as follows: "When you Use B be shure to get all the Ingredients Under Your Eyelids, try to hold it 3 to 5 seconds. You can feel the Sulfur roll around, and it will push the Cataract of from the Eyeball, it comes out looking like little balls of puss." It is not surprising that investigation of this obvious quackery by the Post Office Department resulted in a notice from that agency to Langley to show cause why a fraud order should not be issued against him. He neither put in an appearance nor sent counsel to represent him, and when a transcript of the hearing was sent to him and he was given an opportunity to submit any reply that he desired, he simply returned the transcript without any letter or brief. Previously, however, he had sent the Post Office Department a declaration to the effect that his business had been discontinued prior to September 1943 and that even when it was still being conducted, he had made no false or fraudulent promises through the mails. This claim was disproved by means of testimony given at the hearing of the case by witnesses for the government. One of these, a chemist of the Food and Drug Administration, testified that he had made a chemical analysis of the product purchased from Langley by a person who ordered it for the removal of cataract, and that it was a yellowish-white powder consisting of 75.28 per cent of sugar, 24.60 per cent of sulfur, and 0.12 per cent of acid-insoluble material, apparently either silica or sand. The other government witness, a Senior Medical Officer of the Food and Drug Administration, testified on the nature and treatment of cataracts. He further testified that the only cure for a cataract is the removal by operation of the lens of the eye or such part thereof as may be cutting out the light from the retina. He added that he was familiar with the ingredients of the nostrum in question, and that, in his opinion, the application of this or any other form of medication to the external surface of the eyeball between the eyelid and the cornea would be utterly unscientific and ridiculous. On May 27, 1944, the Post Office Department debarred Langley's business from the mails by issuing a fraud order against it.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Taxation: Exemption of Charitable Hospital from State Use Tax.—The Oklahoma Tax Commission assessed a use tax against the Baptist General Convention of Oklahoma by reason of goods purchased outside the state for use and consumption within the state by the Oklahoma Baptist Hospital, which it operated. From an order approving such assessment, the plaintiff appealed to the Supreme Court of Oklahoma.

Section 6, subdivision (i) of the Sales Tax Act (S. L. 1937, ch. 66, art. 10, p. 445) provides:

> There is hereby specifically exempted from the tax imposed by this Act the following:
>
> (i) The gross receipts or gross proceeds derived from the sale of tangible personal property, or service to charitable organizations, except where such organizations may be engaged in business for profit or savings, competing with other persons engaged in the same or similar business.

The plaintiff contended that it was exempt from the tax on the ground that "it is not engaged in business for profit or savings" in the operation of the Oklahoma Baptist Hospital. In support of this contention, evidence was introduced to the effect that during the year involved in this action the hospital was operated at a net loss of over eight thousand dollars, and that during the period from 1931 to 1940, the loss was over twenty-one thousand dollars. The evidence also showed that it was the hospital's policy not to refuse a patient because of inability to pay and that the plaintiff and other direct contributors had donated over one hundred and six thousand dollars toward the upkeep of the hospital during such nine year period. In calculating the amount of loss referred to, two items were taken into consideration, bond interest and expense and depreciation. The tax commission contended (1) that such items should not properly be considered in calculating loss and (2) that whether or not a profit was made is not material in determining whether or not a hospital is operating "for profit or savings."

The Supreme Court said that the intent of the legislature was clearly expressed when it said that charitable organizations were exempt if not engaged in business for profit or savings. Of course, continued the court, a loss for one year would not prove that an organization was not engaged in business for profit but would prove only that a loss was sustained during the one year. But if such an organization continued to operate for a period of years, and year after year sustained a loss, then the only reasonable and logical conclusion to reach would be that profit or savings was not the objective of the organization, but that some other motive prompted its existence and survival. The court then held that although bond expenses were not an allowable item in determining whether or not the hospital was operating at a profit, depreciation was. We reach this conclusion, said the court, because profit or savings implies a gain resulting from the employment of capital. In the instant case it means a pecuniary gain resulting from the operation of the hospital. Allowance for depreciation is the sum which should be set aside for the taxable year in order that, at the end of the useful life of the business equipment, the aggregate of the sums set aside will (with the salvage value) suffice to provide an amount equal to the original cost. Since profit does not refer to what is already owned but is an accretion to what is already possessed, said the court, a distinction is made between money paid on bonded indebtedness and money set aside for depreciation, to replace that which is already owned. Allowing the deduction of the item for depreciation, therefore, the record showed that the hospital operated at a loss not only during the taxable year but for nine consecutive years. The court accordingly concluded that the plaintiff was not operating the hospital for profit or savings and the judgment for the defendant was reversed.—*Baptist General Convention v. Oklahoma Tax Commission, 162 P. (2d) 1012 (Okla., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Jan. 5, page 50.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ALASKA: Juneau, March 5. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

ARKANSAS: * Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana.

CALIFORNIA: *Written.* Los Angeles, March 11-14. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

CONNECTICUT: * *Medical. Examination.* New Haven, March 12-13. *Endorsement.* New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 12-13. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, March 11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

HAWAII: Honolulu, Jan. 14-17. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu.

IDAHO: Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, March 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, March 12-15. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MICHIGAN: * Detroit, March 26-28. Sec., Board of Registration in Medicine. Dr J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEVADA: Carson City, Feb. 4. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: *Reciprocity.* Raleigh, Jan. 16. Sec., Dr. Ivan Proctor, Raleigh.

OHIO: *Examination.* Columbus. March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: * Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

SOUTH DAKOTA: * Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April 1946. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON: * Seattle, Jan. 14-16. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WYOMING: Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: Feb. 9. Address State Board of Healing Arts, 250 Church St., New Haven 10.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

OKLAHOMA: Oklahoma City, Jan. 21. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Feb. 13. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

50:353-468 (Oct.) 1945

*Estrogen-Progesterone Therapy: New Approach in Treatment of Habitual Abortion: Studies Indicating Its Rationale in 24 Treated Cases. N. W. Vaux and A. E. Rakoff.—p. 353.

Renal Glomerular and Tubular Function in Relation to Hyperuricemia of Preeclampsia and Eclampsia. L. C. Chesley and Laura O. Williams. —p. 367.

Vaginal Hysterectomy in Management of Descensus Uteri. W. C. Danforth.—p. 376.

*Bilateral Polycystic Ovaries: Significance in Sterility. I. F. Stein. —p. 385.

Management of Placenta Previa: Twelve Year Study. H. C. Williamson and A. V. Greeley.—p. 398.

Should We Change Our Present Standard on Infant Viability? R. L. Haas.—p. 406.

Treatment of Primary Dysmenorrhea with Deproteinated Pancreatic Extract (Depropanex). L. L. Grossmann.—p. 411.

Diethylstilbestrol in Treatment of Functional Ovarian Disorders. G. D. Patton.—p. 417.

Mesenteric Thrombosis Complicated by Dermoid Cyst. Ruth E. Lesh. —p. 422.

Seven Year Review of Eclampsia, with Special Reference to Treatment with Veratrum Viride. G. G. Greene.—p. 427.

Continuous Caudal Analgesia in Curettage for Abortion. C. W. Newton Jr. and G. J. Andros.—p. 430.

Clinical Experience with New Synthetic Ergonovine-like Substance. J. E. Tritsch and E. Schneider.—p. 434.

Dystocia Due to Shoulders. C. G. Barnum.—p. 439.

Sickle Cell Anemia Complicated by Pregnancy. Mary Spivack.—p. 442.

Congenital Absence of Sacrum and Coccyx Complicating Pregnancy. W. Berman.—p. 447.

Strangulated Hernia Containing Pregnant Uterus at Term. C. E. Boys. —p. 450.

Gas Bacillus Infection of Uterus Treated with Penicillin. G. S. Hudson and M. P. Rucker.—p. 452.

Ovarian Pregnancy. J. B. Ballina and N. E. Chiodi.—p. 456.

Estrogen-Progesterone Therapy in Habitual Abortion.—Vaux and Rakoff used estrogen and progesterone in the treatment of habitual abortion. Twenty-four women had gone through a total of eighty previous pregnancies from which there had resulted only 7 living babies. There had been fifty-two abortions, eighteen miscarriages, two stillbirths and one premature live birth in which the infant did not survive. More than half of these patients had no difficulty in becoming pregnant; the others had diminished or poor fertility. None of these patients had pelvic abnormalities or systemic diseases which would influence abortion. Two patients had Rh incompatibilities (Rh-negative wife and Rh-positive husband). One of these delivered a normal living baby and the others aborted; in neither case did Rh antibodies develop. Examination of the endometrium obtained by biopsy or curettage was available in 11 cases before the present pregnancy. Good secretory function was noted in 7 cases, impaired secretory function in 2 and an interval endometrium in 2. Urine hormone assays were made in 15 cases prior to the onset of pregnancy. Urine gonadotropin assays made at the midcycle were normal in 13 of these. Urine estrogens were diminished in two thirds, while pregnandiol values were low or absent in over half. Hormone assays consisting of urine pregnandiol determinations, serum estrogens and serum gonadotropins were made early in pregnancy in 19 cases. In almost all of the cases one or more additional assays were made and in 3 cases monthly assays were done. On the initial assay all except 1 showed normal serum gonadotropins, but serum estrogens and pregnandiol were diminished in more than three fourths of the patients. In 13 of the 19 patients both estrogen and pregnandiol were diminished. These findings indicate a deficiency of the corpus luteum during the early weeks of gestation and an inadequacy of the placenta to take over its functions. Many of these patients had been unsuccessfully treated in previous pregnancies with progesterone, thyroid and vitamin E. During the present pregnancy all patients were treated by the injection of progesterone 10 mg. and alpha-estradiol benzoate 10,000 rat units given together two or three times weekly. This treatment was generally continued to the period of viability or later. There were 15 full term live births with 1 neonatal death; 3 premature live births with survival of 2; 2 miscarriages, and 4 abortions.

Bilateral Polycystic Ovaries.—Stein lists menstrual irregularity featuring amenorrhea, a history of sterility, the masculine type of hirsutism and, less consistently, retarded breast development and obesity as characteristic manifestations of bilateral polycystic ovaries. In 53 patients with bilateral polycystic ovaries diagnosis was made by the presence of a typical clinical syndrome and was substantiated by gynecography (pneumoperitoneum). Endocrine and other medical therapy proved valueless. Surgical treatment in the form of bilateral ovarian wedge resection and suture has proved to be a satisfactory treatment. All of the 53 patients were treated surgically. Seventeen married patients and 3 of the single patients who subsequently married (a total of 20) became pregnant after operation, resulting in 26 pregnancies and 28 babies. Four of the women were pregnant twice, one three times, and there were two sets of twins. Periodic checkup postoperatively revealed that there were no recurrences of bilateral polycystic ovaries. Three single women who had febrile and painful postoperative courses developed a unilateral ovarian cyst with adhesions. The author recommends that bilateral polycystic ovaries associated with amenorrhea, sterility and/or hirsutism be treated by bilateral ovarian wedge resection.

American Journal of Physiology, Baltimore

144:477-636 (Sept.) 1945. **Partial Index**

Reinnervation of Denervated Muscle Fibers by Adjacent Functioning Motor Units. A. V. Harreveld.—p. 477.

Factors Concerned with Induction of Tourniquet Shock. E. Mylon and M. C. Winternitz.—p. 494.

Alkalinizing Agents and Fluid Priming in Hemorrhagic Shock. R. C. Ingraham and H. C. Wiggers.—p. 505.

Experimental Analysis, by Means of Acetylcholine Hypotension, of Problem of Vagal Cardioaccelerator Fibers. H. F. Haney, A. J. Lindgren and W. B. Youmans.—p. 513.

Determination of Propagation Velocity of Arterial Pulse Wave. W. F. Hamilton, J. W. Remington and P. Dow.—p. 521.

Acquired Resistance to Water Intoxication. Mildred Liling and R. Gaunt.—p. 571.

Blood Pressure Response to Acutely Increased Pressure on Spinal Cord. R. A. Groat and T. L. Peele.—p. 578.

Average Food Consumption in Training Camps of United States Army (1941-1943). P. E. Howe and G. H. Berryman.—p. 588.

Bleeding Volume in Experimental Shock Produced by Prolonged Epinephrine Administration, Intraperitoneal Injection of Glucose and Intestinal Strangulation. H. Lawson, R. C. Porter and W. S. Rehm. —p. 595.

Response of Gastrointestinal Tract to Ingested Glucose Solutions. P. F. Fenton.—p. 609.

Lipotropic Action of Lipocaic: Study of Effects of Lipocaic, Methionine and Cystine on Dietary Fatty Livers in White Rat. D. W. Clark, Mary L. Eilert and L. R. Dragstedt.—p. 620.

Observations in Total Biliary Fistula Dogs Without Bile Therapy. C. C. Scott.—p. 626.

American Journal of Public Health, New York

35:987-1120 (Oct.) 1945. **Partial Index**

Public Health in Reconversion Period. T. Parran.—p. 987.

Recent Advances in Epidemiology of Arthropod Borne Virus Encephalitides Including Certain Exotic Types. W. McD. Hammon and W. C. Reeves.—p. 994.

*Equal Area Projections and Azimuthal Equidistant Projection in Maps of Disease. S. Jarcho.—p. 1005.

Field Study of Prevalence of Clinical Manifestations of Dietary Inadequacy. W. J. Darby and D. F. Milam.—p. 1014.

New Developments in Teacher Education, with Implications for Health Education. M. E. Troyer.—p. 1022.

Teaching Correctness of Thinking in Matters of Health. C. J. Potthoff. —p. 1036.

Legal Basis for Venereal Disease Control. J. H. Lade.—p. 1041.

Difficulties in Planning Public Health Programs in Tropical Areas. G. Arbona and P. Morales-Otero.—p. 1057.

Service Records and Their Administrative Uses: Experience from School Health Service. A. H. Kantrow, Leona Baumgartner and H. H. Goode.—p. 1063.

Maps of Diseases.—According to Jarcho, Mercator projection maps have limitations which are of importance in world maps of tropical diseases. One of the chief disadvantages is that,

since the arctic and antarctic regions are exaggerated, the equatorial zones appear disproportionately small. Territories which are of equal size on a Mercator map are not necessarily equal in area. On Mercator's projection Dutch Borneo and Iceland seem to be approximately equal in size. Actually Dutch Borneo (208,000 square miles) is more than five times as large as Iceland (39,700 square miles). For world maps intended to depict the size of areas in which a disease prevails, the Mercator projection should be supplanted by projections exhibiting the "equal area" property. Equal area projections, such as Mollweide's projection, the sinusoidal projection and Goode's homolosine projection, all possess the equal area property. The azimuthal equidistant projection is a cartographic tool which shows the distance between one focal point and all other points on the earth's surface. This projection is suitable for world maps of diseases which have a relatively small and continuous realm of distribution. Examples of such diseases are cholera, tsutsugamushi fever, Russian spring-summer encephalitis, filariasis caused by Wuchereria malayi and fièvre boutonneuse. Every map drawn on the azimuthal equidistant projection is centered on a definite point, usually a city. The text is accompanied by maps drawn according to different projections to illustrate certain points stressed by the author.

American Review of Tuberculosis, New York

52:179-268 (Sept.) 1945

Blood Cell Counts: Their Statistical Interpretation. W. N. Berg. —p. 179.
*Pleural Shock and Cerebral Embolism. J. B. Andosca and J. A. Foley. —p. 221.
Family Histories in Tuberculosis. S. E. Simpson.—p. 231.
Epidemiology of Tuberculosis in Mental Hospital. D. B. Ruskin.—p. 248.
Bronchography in Pulmonary Tuberculosis: VI. Thoracoplasty, Part 2. B. A. Dormer, J. Friedlander and F. J. Wiles.—p. 258.

Pleural Shock and Cerebral Embolism.—According to Andosca and Foley, pleural puncture employed either in pneumothorax therapy, in aspiration of an empyema cavity or in exploratory thoracocentesis may result in signs and symptoms which have been diagnosed either as pleural shock or as cerebral embolism. The confusion which exists between the two diagnoses gives a false impression concerning the seriousness of the complication. Pleural shock is rare and may occur in excitable and neurotic patients, but the symptom complex of cyanosis, changes in respiration and circulation, convulsions, ocular disturbances, loss of consciousness, aphasia, paralysis and sometimes death, occurring during pleural puncture, is definitely due to cerebral embolism. The treatment consists in lowering the patient's head and giving cardiac stimulants. The prognosis in cerebral embolism depends on the amount of air entering the blood stream and the region of the brain most seriously involved. The authors have encountered 12 cases with 3 fatalities in a series of 90,120 pleural punctures at the Boston Sanatorium. One of the fatal cases was attributed to procaine hydrochloride poisoning. Procaine hydrochloride in a 1 per cent solution should be employed only for the initial pneumothorax treatment and not for the subsequent refills.

Annals of Otol., Rhin. and Laryngology, St. Louis

54:443-646 (Sept.) 1945

Management of Chronic Sinus Disease: Critical Analysis of Modern Therapeutic Measures. O. E. Van Alyea.—p. 443.
Role of Otologist in Hearing Conservation Program. W. E. Grove. —p. 458.
Chronic Deafness: Its Treatment in the Army. E. H. Truex Jr.—p. 466.
Stroboscopic Examination of Ear. H. B. Perlman.—p. 483.
Recurrent Severe Hemorrhage from Nose and Pharynx. F. B. Sargent. —p. 495.
*Aero-Otitis Media: Further Report of Purulent Otitis Media Complicating Aero-Otitis Media. R. W. Wright.—p. 499.
Acoustic Trauma. L. C. Boemer.—p. 513.
Cancellous Bone Transplants for Correction of Saddle Nose. S. Fomon, R. Luongo, A. Schattner and F. Turchik.—p. 518.
Management of Fractures of Nasal Bony Vault. J. H. Hersh.—p. 534.
*Rupture of Tympanic Membrane Due to Blast: Mechanical Hypothesis. J. J. Cantor.—p. 554.
Postbronchoscopic Reactions. L. L. Titche.—p. 568.
Thornwaldt's Syndrome. A. R. Hollender and P. B. Szanto.—p. 575.
Ossifying Fibroma of Ethmoid Cells and Frontal Sinus: Report of Case. G. H. Woodruff.—p. 582.

Aero-Otitis Media.—Wright thinks that the adenoid and lymphoid tissue in the epipharynx is the important causal agent in aero-otitis media. This tissue is easily inflamed by upper respiratory disease and accounts for the high incidence of aero-otitis media in the group between 18 and 27 years which he studied. In older age groups, in which there is an atrophy of lymphoid tissue, there may be a different picture. The pain may be moderate or so severe as to cause unconsciousness and shock. There may be nausea, vomiting and dizziness. The pain is usually deep in the ear but may be in front of the ear or over the mastoid region. The pain, even though severe for a time, is of short duration and is followed by symptoms of stuffiness and loss of hearing. The acute aero-otitis media does not demand much in the way of relief. The pain has almost invariably disappeared on arrival at the clinic. Inflation usually helps after some days have elapsed and the hearing loss and the stuffiness persist. Since the adenoid tissue seems to be the important pathologic factor in the production of aero-otitis media, the prophylactic treatment is the elimination of adenoid tissue. If a large mass of adenoid tissue is found, it is removed surgically. If the adenoid tissue is around the tubes and in the vault, which is its usual location, it is treated by irradiation in fractional doses. Treatment with x-rays or radium should give good results, such as have already been demonstrated in children in the treatment of deafness which exists on the same pathologic basis. The author has observed 39 cases of purulent otitis media occurring as a complication of aero-otitis media.

Rupture of Tympanic Membrane Due to Blast.—Cantor states that rupture of the tympanic membrane can be explained without a negative pressure being present. The damage, such as the removal of the ossicular chain, cannot be explained by a negative pressure of even 15 pounds to the square inch but can be explained by his positive pressure hypothesis. The pathway of the blast is through the eustachian tube and not through the external auditory canal. Unilateral rupture of the tympanic membrane is due to the occlusion of the eustachian tube on the unruptured side. Pathologic conditions of the nose may be responsible for the rupture of the tympanic membrane. Internal ear damage can best be explained by this hypothesis. To afford the maximum degree of protection, the lateral surface of the drum should be protected from the direct force of the blast; the person should assume a crouching position, thereby forcing the abdominal viscera against the diaphragm and expelling the maximum amount of air from the body cavities; and the mouth should be open and the nose clear so that the residual air compressed in the body cavities is not forced into the eustachian tubes and the middle ears.

Archives of Ophthalmology, Chicago

34:181-270 (Sept.) 1945

Response of Chronic Simple Glaucoma to Treatment with Cyclodiathermy Puncture. F. W. Stocker.—p. 181.
Diabetic Retinitis. H. Elwyn.—p. 187.
Revaluation of Herbert's Flap Operation for Glaucoma. L. Lehrfeld. —p. 191.
Penetration of Penicillin into the Eye: Further Studies. L. von Sallmann.—p. 195.
*Vitamin C Saturation and Senile Cataract. A. Rados.—p. 202.
Symmetrical Defects in the Lower Lids Associated with Abnormalities of Zygomatic Processes of Temporal Bones. I. H. Leopold, J. F. Mahoney and Mabel Lee Price.—p. 210.
Value of Culture Before Operation for Cataract. J. H. Dunnington and D. Locatcher-Khorazo.—p. 215.
Cavernous Degeneration, Necrosis and Other Regressive Processes in Optic Nerve with Vascular Disease of Eye. A. Loewenstein.—p. 220.
Effect of Anoxia on Hyperphoria and Its Analogy with Convergent Concomitant Squint. F. H. Adler.—p. 227.
Ophthalmodynamometry. F. L. P. Koch.—p. 234.

Vitamin C Saturation and Senile Cataract.—Rados performed the saturation test for vitamin C on 200 patients with cataract. Of these patients 135 showed an excretion level approximating that found in normal subjects living on an adequate mixed diet. The remaining 65 showed a low level; in 35 the deficiency was mild, but in 30 it was more severe. The author concludes that there is not sufficient evidence to indicate that vitamin C deficiency contributes to the formation of cataract. Transparency of the lens is not dependent on the vitamin C saturation of the body, since the large number of senile cataracts associated with a normal saturation level would contradict such an assumption. The vitamin C deficiency of some of the patients with cataract seems to be the natural result of the vitamin C deficiency of old age.

Archives of Otolaryngology, Chicago

42:157-234 (Sept.) 1945

Vocational Rehabilitation for Deaf and Hard of Hearing. M. M. Walter. —p. 157.
*Effects of Gun Blasts on Hearing. W. Machle.—p. 164.
Aero-Otitis Media and Loss of Auditory Acuity in Submarine Escape Training. C. W. Shilling.—p. 169.
Deafness with Undeveloped Mastoid and Normal Tympanic Membrane. F. Johnson.—p. 174.
Carcinoma of Larynx: Significance of Histopathologic Study of Serial Sections: Preliminary Report. M. F. Snitman.—p. 178.
Ménière's Famous Autopsy and Its Interpretation. M. Atkinson.—p. 186.
Plasmocytoma of Temporal Bone. J. C. Gros.—p. 188.
Reconstructive Treatment of Gunshot Wound of Face and Neck. M. Lewin.—p. 191.
Diagnosis and Treatment of Nonsuppurative Sinusitis. S. E. Roberts. —p. 198.
Paranasal Sinuses. S. Salinger.—p. 212.

Effects of Gun Blasts on Hearing.—An initial survey of 45 gunnery instructors was carried out by Machle to establish the characteristics of the hearing loss that had occurred in armored personnel frequently exposed to blasts of 37 and 75 mm. guns. Experimental studies under controlled conditions were carried out on 12 subjects. Repeated audiometric tests were made for four days prior to exposure. A base line was thus established. The better ear was then used as the test ear. During exposure the control ear was protected by a soft rubber plug carefully fitted into the canal and a sponge rubber pad covering the external ear, over all of which a heavy cloth helmet was firmly held by a rubber band. The men were exposed to gun blasts as follows: 8 to that of the 75 mm. gun, 3 to that of the 37 mm. gun and 3 to that of the 0.30 caliber machine gun. They were placed at measured distances at right angles to the barrel of the gun at the level of the muzzle; with the 75 and 37 mm. guns, the subjects were at a distance of 8 feet (2.4 meters); with the 0.30 caliber machine gun, at a distance of 6 feet (about 2 meters). Audiometric examinations were begun within five minutes after exposure and were repeated at intervals of two, four and twenty-four hours, with the twenty-four hour pattern being used as the base line for the next exposure record. At the conclusion of the overall period of exposure, recovery was observed by means of daily audiograms. It was found that the characteristics of the hearing loss following controlled exposure to gun blast are like those of deafness from sustained high noise levels. Acoustic injury and loss are common in gunnery instructors, artillerists and others; potentially serious partial deafness may be expected to occur in significant numbers of military personnel. With repeated equal exposures, acoustic damage is cumulative, apparently largely because recovery from the initial traumatic response is incomplete. Partial recovery of hearing regularly occurs in the first few days after cessation of repeated daily exposures. After months of exposure, recovery to preexposure levels of acuity is doubtful; there was evidence of partial recovery in only 2 of 10 men studied.

Archives of Pathology, Chicago

40:141-208 (Sept.) 1945

Pathology of Lymphocytic Choriomeningitis in Mice. R. D. Lillie and C. Armstrong.—p. 141.
*Experimental Endocarditis (Rheumatic-like and Bacterial) in Rats. B. J. Clawson.—p. 153.
Studies on Pathogenesis of Glomerulonephritis: II. Production of Glomerulonephritis in Rats by Means of Autoantibodies to Kidney. P. A. Cavelti and Else S. Cavelti.—p. 158.
Id.: III. Clinical and Pathologic Aspects of Experimental Glomerulonephritis Produced in Rats by Means of Autoantibodies to Kidney. P. A. Cavelti and Else S. Cavelti.—p. 163.
Morphologic Studies of Rats Deprived of Essential Amino Acids: II. Leucine. M. E. Maun, W. M. Cahill and Ruth M. Davis.—p. 173.
Morphologic Aspects and Genesis of Disorders of Adenohypophysis. J. E. Kraus.—p. 191.

Experimental Endocarditis in Rats.—Clawson attempted to produce acute rheumatic and bacterial endocarditis in rats. Valvular lesions closely simulating acute rheumatic endocarditis anatomically could be produced in a high percentage of rats by injecting either Streptococcus viridans or Streptococcus hemolyticus into the blood stream. Some of the rheumatic-like lesions showed a degree of healing resembling the early healing observed in human rheumatic valvulitis. Lesions similar to human bacterial endocarditis were produced on the same valve or on separate valves in association with the rheumatic-like vegetations, or the bacterial vegetations occurred independently. These rheumatic-like and bacterial lesions were produced only when the bacterial organisms were in the blood stream. Endocarditis failed to develop following the injection of other proteins: Dick toxin, rabbit and horse serums, egg albumin and an extract of Streptococcus viridans. Agglutinins in the blood stream apparently favor the development of valvulitis. Hypersensitiveness (allergy), immediate (anaphylactic) or delayed (bacterial), does not appear to be a factor in the genesis of the endocarditis except possibly in the bacterial form of endocarditis, in which the delayed type of hypersensitiveness may have been an influencing factor. These experiments support the theory that acute rheumatic endocarditis and bacterial endocarditis are etiologically similar but differ in degree of manifestation and that they occur as a response to a direct valvular infection with the bacterial cells.

Arizona Medicine, Phoenix

2:275-340 (Sept.) 1945

Virginal Hypertrophy of Breast. K. S. Harris and M. Rosenthal. —p. 295.
Management of Cleft Lip. J. M. Ovens.—p. 298.
Fracture Therapy in Community Hospital Stressing Limited Need for Open Reduction. H. A. Barnes.—p. 303.

Bulletin of Johns Hopkins Hospital, Baltimore

77:83-142 (Aug.) 1945

Peripheral Neuritis: Clinical and Physiologic Observations on 20 Cases of Unknown Etiology. M. Harvey, S. W. Kuffler and J. B. Tredway. —p. 83.
Toxicity of Sulfanilamide on Higher Nervous Activity. W. H. Cantt and E. K. Marshall.—p. 104.
Effects of Crude and Purified Penicillin on Continuous Cultures of Normal and Malignant Cells. G. O. Gey, M. K. Gey, F. Inui and H. Vedder.—p. 116.
*Rat Bite Fever Due to Streptobacillus Moniliformis Treated with Penicillin: Case. R. A. Weber and C. B. Favour.—p. 132.

Penicillin in Rat Bite Fever.—According to Weber and Favour, Streptobacillus moniliformis infections subsequent to rat bite have reacted unpredictably to arsenicals, aurothiomalate and sulfonamides. They may cause months to years of severe disability and may terminate fatally. Weber and Favour report a case of rat bite fever due to Streptobacillus moniliformis in which the organism isolated from the patient's blood was found to be inhibited by as little as 0.001 unit of penicillin per cubic centimeter in mediums which normally supported luxuriant growth. Intramuscular penicillin therapy was associated with prompt recovery. The patient has remained well one year later.

Gastroenterology, Baltimore

4:453-538 (June) 1945

*Hypertrophic Gastritis Simulating Gastric Carcinoma. H. M. Pollard and R. R. Cooper.—p. 453.
Value of Plasma Vitamin A Determinations in Differential Diagnosis of Jaundice: Preliminary Report. J. M. Ruffin and B. Wise.—p. 466.
Troubles of Persons with Exaggerated Knee Jerks. W. C. Alvarez and A. H. Kadish.—p. 473.
Analytical Survey of 1,132 Patients Gastroscopically Examined. L. L. Hardt, A. R. Hufford and J. I. Rabens.—p. 477.
Polyamine Formaldehyde Resin: I. Its Effect on *p*H of Acidified Solutions and *p*H and Pepsin of Gastric Juice in Vitro; II. Its Toxicity in Rats: Preliminary Feeding Tests. H. L. Segal, H. Hodge, J. S. Watson Jr. and W. J. Merle Scott, with assistance of Hilda A. Coates.—p. 484.
What is *p*H? Explanation of Various Measures of Acidity Employed in Gastroenterology. F. Hollander.—p. 497.

Hypertrophic Gastritis Simulating Gastric Carcinoma.—Pollard and Cooper of the University Hospital of Ann Arbor, Mich., during the past four years observed 8 patients whose gastric roentgenograms revealed a filling defect which strongly suggested a neoplasm. All were men between the ages of 22 and 65. In all but 2 cases the diagnosis of localized hypertrophic gastritis was established with reasonable certainty by gastroscopy. This diagnosis and the absence of neoplasm were confirmed in 7 of the 8 cases by laparotomy and in 6 of the cases by microscopic examination of removed tissue. Since early diagnosis and treatment are essential in the management of gastric neoplasm and operation may be contraindicated in cases of hypertrophic gastritis, it seems important that all these cases be subjected to gastroscopy before surgery is undertaken. It is wise not to depend on a trial of conservative therapy to establish the diagnosis.

Journal of Nervous and Mental Disease, New York

102:327-432 (Oct.) 1945

Hallucinations and Mental Imagery. R. Roman and C. Landis.—p. 327.
Primary Lateral Sclerosis: Distinct Clinical Entity. F. M. Stark and F. P. Moersch.—p. 332.
Some Aspects of Shock Therapy: Structure of Psychosis. G. Bychowski. —p. 338.
Modification of Electro-Shock Convulsion by Sodium Pentothal and Curare. M. Brody.—p. 357.
Spinal Cord Changes with Avitaminosis. N. R. Shulack and M. Peters. —p. 359.
Primitive Habits in Preterminal Stage of Schizophrenia, with Particular Reference to Hoarding and Self-Decorating Habits. S. Arieti.—p. 367.
Syphilitic Peripheral Seventh Nerve Paralysis: Discussion of Case. G. A. Rickles.—p. 376.
Intrathecal and Oral Vitamin Therapy in Various Neurologic Disorders. G. Heilbrunn and N. Hoffenberg.—p. 379.
Comparative Value of Electroencephalogram and Abstraction Tests in Diagnosis of Brain Damage. M. Greenblatt, S. Levin and C. Atwell. —p. 383.
*Personality Disintegration Incident to Anoxia: Observations with Nitrous Oxide Anesthesia. D. E. Fletcher.—p. 392.
Critical Appraisal of Mental Examination in State Hospitals. J. Perlson. —p. 404.
Endolumbar Pneumoencephalography, Simplified: Note on Its Advantages. J. H. Globus and J. L. Simon.—p. 412.
Minnesota Multiphasic Personality Inventory in Clinical Practice. A. L. Benton.—p. 416.
Observations on Mechanism of Electrically Induced Convulsions. F. Reitman and B. W. Richards.—p. 421.

Personality Disintegration Following Nitrous Oxide Anesthesia.—Fletcher studied 29 cases of personality disintegration following the use of nitrous oxide. Nervous and mental residuals following nitrous oxide anesthesia persisted for many years in 1 case. Another case illustrated that a small quantity of nitrous oxide given repeatedly may have a cumulative effect and lead to severe distintegration of the personality. A single administration of nitrous oxide, apparently unaccompanied by respiratory difficulties, may result in serious nervous and mental impairment with personality changes. One of the patients, who was nervously unstable, suffered from mental impairment following nitrous oxide anesthesia. It is reasonable to believe that such inherent constitutional weakness would be enhanced by nitrous oxide. The author regards anoxemia as the etiologic factor of the disturbances caused by nitrous oxide. The problem of anesthesia and anoxia may be related to problem children in school. A general anesthetic, frequently nitrous oxide, is employed for the removal of tonsils, adenoids and teeth of children of all ages. Many perplexing problems of the school room may possibly be explained on this basis.

Journal of Pharmacology & Exper. Therap., Baltimore

84:197-300 (July) 1945

Pharmacologic Studies of New Vasoconstrictor: 2-Naphthyl-(1')-Methyl-Imidazoline Hydrochloride (Privine or Naphazoline): III. Attempt to Localize Seat of Action in Terms of Adrenergic and Cholinergic Foci. F. F. Yonkman, Barbara Rennick and H. L. Schwerma.—p. 197.
Therapeutic Activity and Toxicity of Soluthiazole and Solupyridine. R. Wien, J. Harrison, W. A. Freeman and G. E. Phillips.—p. 203.
Absorption and Excretion of Soluthiazole and Solupyridine. R. Wien and J. W. F. Hampton.—p. 211.
Soluthiazole and Solupyridine in Treatment of Experimental Pyocyaneal Infections of Cornea. R. Wien and W. A. Freeman.—p. 219.
Further Studies on Detoxication of Arsphenamines by Ascorbic Acid. E. W. McChesney.—p. 222.
Dibutoline: I. Pharmacodynamic Actions of Choline Ester with Atropine-like Properties. Clare G. Peterson and D. R. Peterson.—p. 236.
Rate of Action of Sulfadiazine and Quinine on Malarial Parasite Plasmodium Gallinaceum. S. Brackett, E. Waletzky and Margaret Baker. —p. 254.
Flavicin: II. Antibacterial Substance Produced by Aspergillus Flavus. M. T. Bush, A. Goth and H. L. Dickison.—p. 262.
Biologic Assay of Epinephrine. R. H. Noel.—p. 278.
*Quantitative Observations on Mercuhydrin and Mercupurin. W. Modell, H. Gold and D. A. Clarke.—p. 284.
Action of Marfanil and Other Anticlostridial Agents on Anaerobic Blood Agar Plates. C. O. Siebenmann and Helen Plummer.—p. 291.

Mercuhydrin and Mercupurin.—Modell and his associates compare the diuretic potency and irritant properties of mercuhydrin with mercurophylline or mercupurin. Mercuhydrin is supplied in the form of a solution of the sodium salt and each cubic centimeter contains 88 mg. of the compound representing 39 mg. of mercury in organic combination with 48 mg. of theophylline. The authors used mercuhydrin in 92 patients, and in 43 of these quantitative comparisons were made with mercupurin. The patients were selected from 1,500 ambulant patients in attendance at the cardiac clinics. All had organic heart disease with advanced congestive failure. All the common varieties of heart disease were represented, namely arteriosclerotic, hypertensive, rheumatic, syphilitic and hyperthyroid. There were approximately equal numbers of the two sexes in ages from 24 to 78 years. In the dosage range of 1 and 2 cc. the diuretic responses to mercuhydrin and mercupurin by intramuscular and intravenous administration are indistinguishable. Neither of the two agents produces renal injury, as shown by urine examinations and blood nonprotein nitrogen values after weekly injections for periods of three months. A comparison with a "blind test" method shows that mercuhydrin is less irritant than mercupurin by intramuscular injection. Hypersensitivity to either of these agents may not necessarily extend to the other.

Nebraska State Medical Journal, Lincoln

30:341-376 (Oct.) 1945

Pyelography. L. R. Sante.—p. 345.
Prevention of the Common Cold. M. C. Howard.—p. 349.
Treatment of Acute Upper Respiratory Infections. E. E. Simmons. —p. 352.
Acute Upper Respiratory Infections: Variable in Bacteria as They Affect Different Epidemics. F. M. Watke.—p. 354.
Upper Respiratory Infections. L. P. Coakley.—p. 357.

30:377-416 (Nov.) 1945

Recurrent Cerebral Ischemia. T. Findley.—p. 380.
Psittacosis: Report of Fatal Case with Some Unusual Histopathologic Findings. F. H. Tanner, G. W. Covey, H. H. Everett Jr., H. H. Everett Sr. and O. A. Neely.—p. 386.
Present Day Concept of Relationship of Male and Female Sterility R. Luikart.—p. 391.
*Poliomyelitis and Acute Gastrointestinal Upsets. W. R. Kovar.—p. 394.
Rh Factor. L. O. Vose.—p. 403.

Poliomyelitis and Acute Gastrointestinal Upsets.—Kovar observed an acute clinical condition with symptoms and signs similar to those of the preparalytic stage of acute anterior poliomyelitis. The condition made its appearance during the epidemic periods of poliomyelitis in Nebraska and in the years of severe drought and economic depression. There were fever, drowsiness, headache, pain and slight rigidity of the neck, pain and some rigidity of the spine and pain in the legs. The spinal fluid was normal. The author concluded that these cases were gastrointestinal in origin and that the preparalytic symptoms of poliomyelitis were the result of avitaminosis B. He describes 3 typical cases and stresses that acute toxic gastrointestinal upsets are capable of producing symptoms similar to those of the preparalytic stage of poliomyelitis due basically to avitaminosis B and a subclinical acute beriberi. All patients with simple acute gastrointestinal conditions encountered during epidemic periods of poliomyelitis should be given large doses of vitamin B. Vitamin B is also indicated as an adjunct to treatment in all acute debilitating diseases and especially in diarrheas. It is suggested that, if tonsils are to be removed during the poliomyelitis season, high vitamin B intake be insured both before and after operation. Many so-called abortive cases of poliomyelitis may be in reality an acute gastrointestinal condition characterized by symptoms of avitaminosis B. Vitamin B plays an important part in the etiology of poliomyelitis, and the nutritional aspect of poliomyelitis should be thoroughly investigated.

Public Health Reports, Washington, D. C.

60:1201-1232 (Oct. 12) 1945

Anemia and Granulocytopenia in Rats Fed a Diet Low in Pantothenic Acid. F. S. Daft, A. Kornberg, L. L. Ashburn and W. H. Sebrell. —p. 1201.
*Tsutsugamushi Disease (Scrub Typhus): Effects of Immune Rabbit Serum in Experimentally Infected Mice. N. H. Topping.—p. 1215.

60:1233-1264 (Oct. 19) 1945

Opportunities in Psychiatric Nursing. C. H. Favreau.—p. 1233.
Psychiatric Nursing Experience by Affiliation. Mary E. Corcoran. —p. 1237.
Pathology of Experimental Tularemia in Golden Hamster (Cricetus Auratus). R. D. Lillie and C. L. Larson.—p. 1243.

Rabbit Serum in Experimental Tsutsugamushi Disease.—Topping thinks that, from a clinical standpoint, tsutsugamushi disease might lend itself more readily to therapy and even to prophylaxis with an immune serum than Rocky Mountain

spotted fever. With the eschar as an early diagnostic feature, immune serum or some other therapeutic agent could be given earlier and with greater benefit. It has been demonstrated that rabbits suitably inoculated with live antigen from a strain of tsutsugamushi disease develop protective antibodies. A second series of inoculations apparently raises the protective antibody titer. These antibodies can be passively transferred to mice previously infected with lethal doses of yolk sac material from the homologous strain. Death can be prevented in the infected mice, when treated with the serum, after an interval of seventy-two to one hundred and sixty-eight hours from the time of infection. In these tests it appeared that the larger dose was more effective than the smaller.

Southern Medical Journal, Birmingham, Ala.

38:635-706 (Oct.) 1945. **Partial Index**

Efficiency of "Oenethyl" (2-Methyl-Amino-Heptane) as Vasopressor Substance for Spinal Anesthesia. D. A. Roman-Vega and J. Adriani. —p. 635.
*Effects of Intravenous Fluids on Bleeding and Clotting Time. V. C. Baxter.—p. 641.
Premature Separation of Placenta. E. L. Dorsett.—p. 644.
Clinical Aspects of Rh Factor. J. W. Davenport Jr.—p. 648.
*Influence of White Fraction from Reticulogen on Leukocyte Equilibrium. L. J. Berry, T. D. Spies and J. K. Cline.—p. 656.
Exercise in Medicine. F. H. Ewerhardt.—p. 662.
Recent Developments in Physical Medicine. F. H. Krusen.—p. 665.
Report of Investigation of Food Poisoning Outbreaks. R. E. Teague and Sarah V. Dugan.—p. 678.
Failure of Penicillin in Treatment of Pemphigus Vulgaris. C. J. McLoughlin and W. L. Dobes.—p. 681.
Resistance of Alpha Hemolytic Streptococci to Penicillin. Irene T. Rorimer, R. B. Houlihan and G. McL. Lawson.—p. 683.
Gram Negative Intestinal Bacilli from the Southwest: Identification of 400 Cultures. M. Fulton.—p. 693.
Specific Treatment of Black Widow Spider Bite. H. T. Kirby-Smith. —p. 696.

Effects of Intravenous Fluids on Bleeding and Clotting Time.—Three patients on whom vaginal plastic operations had been done at a Galveston hospital developed delayed hemorrhage after receiving over 1,500 cc. of intravenous fluid during and after the operation. Each recovered from hemorrhage and shock promptly without transfusion, packing, blood coagulants or other measures. Studies were made by Baxter on patients who were being prepared for operation and on women after delivery. Three groups of 20 and two groups of 15 patients were studied. The bleeding and clotting time, pulse and blood pressure were taken prior to starting fluids and after each thousand cubic centimeters given. The urinary output was likewise charted. The bleeding time was taken by making a small incision in the lobe of the ear and blotting every thirty seconds with filter paper. The clotting time was taken by the Duke method, placing a drop of blood on a slide and drawing a pin through it every thirty seconds until two or three successive strings of fibrin formed. It was found that isotonic solution of sodium chloride in large quantities (5,000 cc.) caused an increase in the bleeding and clotting time. Five per cent dextrose in isotonic solution of sodium chloride, 5 per cent dextrose in distilled water and 10 per cent dextrose in distilled water decreased the bleeding and clotting time. Fifty per cent dextrose caused no change. The blood pressures varied. There was an average rise of 19 points systolic pressure with isotonic solution of sodium chloride; 13 points systolic, 2 points diastolic with 5 per cent dextrose in isotonic solution of sodium chloride; and 23 points systolic, 4 points diastolic with 10 per cent dextrose. The pulse rate varied usually not over 10 points but occasionally rose 20 points. The urinary output during infusion was as follows: isotonic solution of sodium chloride, 1,115 cc.; 5 per cent dextrose in isotonic solution of sodium chloride, 2,083 cc.; 5 per cent dextrose in distilled water, 4,438 cc.; 10 per cent dextrose in distilled water, 5,360 cc.; highest, 5,800 cc. Fifty per cent dextrose resulted in normal output.

Influence of White Fraction from Reticulogen on Leukocyte Equilibrium.—Berry and his associates observed that leukopenia was prevalent in the malnourished patients who visited their clinic and that the leukopenic patients frequently complained of ulcers in the oral mucous membranes, and some of these persons had bouts of pyoderma. Intravenous injection of a substance obtained in fractionating reticulogen in doses ranging from 20 to 60 mg. was followed by an increase in concentration of leukocytes in the peripheral blood in 12 of 14 patients. Of the 2 that showed no such response, 1 had severe food sensitivities and daily urticarial reactions, the other a profound agranulocytic leukopenia of unknown etiology. The increase in total white blood cells in the 12 malnourished persons was found to be due almost entirely to an increase in neutrophils. At or near the peak of the rise there was a left shift in the Arneth nuclear index. These observations, combined with the fact that essentially constant numbers of lymphocytes, monocytes and erythrocytes were found throughout the test period, were interpreted as reflecting a direct bone marrow delivery of the granulocytic cells.

Texas State Journal of Medicine, Fort Worth

41:281-334 (Oct.) 1945

*Reversible and Irreversible Disease of Liver with Reference to Effect of Choline. G. R. Herrmann and P. A. Rockwell.—p. 288.
*Report on 100 Cases of Rheumatic Fever in Young Adults. R. W. Kimbro.—p. 296.
Incidence of Rheumatic Valvulitis in Military Induction Examinations, with Special Reference to Cardiac Evaluation. C. F. Shaffer.—p. 300.
Experimental Basis for Pathogenesis and Treatment of Renal Hypertension. A. Grollman.—p. 304.
Growth, Thyroid and Dental Caries. C. E. Gilmore.—p. 306.
Terminal Saphenous Resection: Report on Over 300 Cases. E. Zax. —p. 307.
Endometriosis. A. O. Severance.—p. 310.
Relief of Pain in Obstetrics: Review of 1,982 Consecutive Deliveries. H. C. Slocum.—p. 312.
Rhinoplastic Correction of Common Nasal Deformities. J. H. Barrett. —p. 315.
Tuberculosis in Selected Groups. H. E. Smith.—p. 319.

Choline in Disease of Liver.—Herrmann and Rockwell report 32 cases of hepatic cirrhosis studied in the John Sealy Hospital in Galveston, Texas. A low serum albumin seemed to be the most reliable single sign of liver disease. Six clinical cases are presented in detail. Liver damage in 4 of the patients proved reversible. The enlarged livers were caused by alcoholic dietary deficiency and probably fatty metamorphosis; 2 of the patients responded to high protein diets supplemented with casein hydrolysates and brewers' yeast of high choline content. Four patients likewise responded conspicuously to the addition of choline chloride to the diet. Two cases of chronic cirrhosis of the liver with shrunken hobnailed livers and ascites failed to show response to choline chloride administration. Two patients with chronically engorged and anoxic livers of congestive heart failure, with possibly some fatty changes, showed striking reduction in the liver and general improvement following the administration of choline chloride in addition to other supportive drugs. The choline chloride may not only act as a lipotrophic substance in these cases but may also contribute to improved myocardial efficiency. Experimental studies on the effects of choline on the cholesterol content of the aorta, heart and liver of aged hens suggests that choline mobilizes cholesterol from the aorta and changes it to phospholipids. Enlarged fatty livers due to anemia and toxemia, as well as alcohol, diabetes, congestive failure or carbon tetrachloride poisoning, are likely to respond to choline, methionine, betaine, inositol or lipocaic.

Rheumatic Fever in Young Adults.—Kimbro discusses the clinical and laboratory features of 100 cases of rheumatic fever in army personnel. Twenty-nine of this group gave a previous history of rheumatic fever in childhood. Pain in a joint of the lower extremity was the initial symptom in the majority of the cases. In 84 cases joint pains were migratory, while in the remaining 16 they were confined to one joint. As a result of the extreme mildness of the arthralgia, the patient was frequently sent to the hospital with the diagnosis of flat feet or sprained ankle and only electrocardiographic abnormalities and the persistence of the elevated sedimentation rate led to the diagnosis of active rheumatic fever. As soon as the diagnosis is made, sodium salicylate should be started in doses that will give a blood salicyl level of at least 375 micrograms per cubic centimeter. The dose necessary to maintain this blood level was 40 grains (2.65 Gm.) given every six hours orally. If the oral dosage does not maintain an adequate blood salicyl level, intravenous administration of salicylate is advisable in doses of 10 Gm. per thousand cubic centimeters of isotonic

solution of sodium chloride as outlined by Coburn. Salicylates were given on the average for 47.9 days; the longest period was 157 days. The average daily dosage was 132 grains (8.5 Gm.). The response was good in 71 cases. The analgesic, antipyretic and antiphlogistic action of salicylates was demonstrated. Response was moderate with 15 and poor in 9. Sixty-two of the 93 patients who have been observed for a sufficient length of time were returned to full military duty. Sixteen showed evidence of cardiac damage. Seven patients are being held for further observation because of residual heart disease. Four patients with the diagnosis of rheumatic fever proved to have rheumatoid arthritis and were discharged. Treatment with salicylates without the addition of sodium bicarbonate is indicated in rheumatic fever. Sulfonamide prophylaxis is indicated in all rheumatic fever subjects during the winter months.

Yale Journal of Biology and Medicine, New Haven

18:1-76 (Oct.) 1945

*Combined Penicillin and Chemotherapy in Acute Gonorrheal Urethritis. R. D. Alley.—p. 7.
*Interference of Penicillin in Determination of Albumin in Urine. D. Perlstein, A. J. Liebmann, H. E. Wright and J. J. Murtaugh, with technical assistance of I. Dorrell.—p. 11.
Health Services for Hospital Personnel: V. Costs of Illness Among Employees and Operating Costs of Personnel Health Service. A. J. Geiger.—p. 15.
Eggplant (Solanum Melongena L.) in Decholesterolization. A. H. Roffo.—p. 25.
Waterhouse Friderichsen Syndrome: Report of 3 Cases in Adults with Necropsy Findings. A. A. Newman.—p. 31.
Occurrence of H. Influenzae in Throats of Adults. E. G. Stillman. —p. 37.
Biochemical and Immunologic Properties of Histoplasma Capsulatum No. 650. G. J. Scheff.—p. 41.
Three Year Survey of Fly Population in New Haven During Epidemic and Nonepidemic Years for Poliomyelitis. M. E. Power and J. L. Melnick.—p. 55.

Penicillin and Chemotherapy in Gonorrheal Urethritis.—Between Dec. 15, 1944 and July 1, 1945 Alley treated 159 cases of acute gonorrheal urethritis. The criteria of diagnosis were the presence of a purulent urethral discharge and demonstration of Neisseria gonorrheae in smears. The first 54 consecutive cases were treated with penicillin alone initially, and in refractory cases this was followed by additional penicillin, sulfathiazole or both. A combination of penicillin and sulfathiazole was employed in 105 of the cases, and the recovery rate in these was 100 per cent. The author concludes that a combination of penicillin and chemotherapy is the rational therapy for acute gonorrheal urethritis for the following reasons: 1. There appears to be a synergistic action between the two drugs when used concomitantly. 2. Both penicillin resistant and chemoresistant cases are provided for under this regimen.

Interference of Penicillin in Determination of Albumin in Urine.—Perlstein and his associates gave intravenous injections of from 300,000 to 400,000 units of penicillin to rabbits weighing from 1,500 to 2,000 Gm. Albumin tests were performed on urine collected from these animals both prior to and after injection of penicillin. The qualitative albumin tests were all negative for albumin before treatment. Severe anuria was noted during the first twenty-four hours following treatment. This condition diminished progressively during the second and third twenty-four hour periods. The output of urine returned to normal during the fourth twenty-four hour period. The samples of urine collected during the first and second twenty-four hour periods following treatment gave triple and quadruple albumin reactions. The samples collected during the fourth twenty-four hour period were negative. The original assumption that an albuminuria had been induced was not found valid. The pseudopositive albumin test appears to be due entirely to the penicillin in the urine. It was later found that on the addition of 25 per cent by volume of acetone or ethyl alcohol to the tube containing 5 cc. of urine no precipitation will occur in the presence of penicillin with the addition of the reagent. By following this precaution, the pseudoreaction can be avoided and a true albumin test can be performed. This test has a limitation in that, beyond a concentration of from 10 to 13 mg. of penicillin in the urine, the acetone or alcohol will suppress but not eliminate the interference of penicillin in the albumin test.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

29:445-500 (Sept.) 1945

Origin and Purposes of Blinking. A. Hall.—p. 445.
Word Blindness: Its Cause and Cure. R. Hall.—p. 467.
*The One Eyed Worker. J. Minton.—p. 472.
Operation for Correction of Paralytic External (Lateral) Rectus Palsy. J. P. S. Walker.—p. 477.
Penicillin in Ophthalmology, with Special Reference to Its Application in Treatment Outside the Hospital. T. G. W. Parry, G. C. Laszlo and J. L. Penistan.—p. 479.
Rupture of Choroid Associated with Cyst of Vitreous. E. Rosen.—p. 486.

The One Eyed Worker.—Minton studied 100 men and women who had lost an eye. The greatest number of eye injuries occurs in the mining industries and the metal and engineering industries. After the excision of an eye the patient takes time to adjust himself to the new visual conditions. Errors in the estimation of distances are made by all during the first few weeks. Gradually the judgment of distances becomes more accurate. The ability to estimate depth perception is also gradually regained. Young persons adjust themselves to the new visual conditions much more quickly than older persons. Simple exercises combined with playing ball have greatly accelerated the process of visual readaptation. It would be helpful if rehabilitation centers were established at eye hospitals. The eye injuries of this war will add a large number of men to the mass of one eyed workers. Many of these men will be anxious to return to their prewar employment. The men should be advised against returning to work which involves chipping, hammering or the drilling of metal. They should not be employed in underground work in the mining industry. Although these men and women are fit for most jobs, the safety of the good eye should be the first consideration.

British Medical Journal, London

2:377-414 (Sept. 22) 1945

B. L. A. Surgery. A. E. Porritt, R. K. Debenham and C. C. Ross. —p. 377.
Mikulicz Resection Operation for Gangrenous Intussusception in Infants. T. A. Hindmarsh, A. W. Stewart and B. Morrison.—p. 382.
Trichomonas Vaginalis Infection in the Male. F. L. Lydon.—p. 384.
Herpes Zoster and Chickenpox. J. Taylor.—p. 385.
*Rat Bite Fever Due to Cat Bite: Satisfactory Response to Penicillin After Failure of Arsenotherapy. G. I. M. Swyer.—p. 386.

Rat Bite Fever Due to Cat Bite.—Swyer reports a case of rat bite feyer in a man aged 36 who had been bitten on the finger by a kitten. Many of the manifestations conformed to the classic picture, but there were also some aberrant features, such as the occurrence of severe myositis, repeated relapse after arsenotherapy and apparent cure by means of penicillin. Neither rat bite nor cat bite fever is a satisfactory term, because these two animals are not the only vectors of the disease. The term sodoku is no better, because it means rat poison. The author thinks that spirillosis is the most acceptable term.

Journal of Hygiene, London

44:149-226 (Sept.) 1945

Refection in Rats and Nature of Growth Promoted by Addition of Small Quantities of Milk to Vitamin Free Diets. F. G. Hopkins and Violet R. Leader.—p. 149.
Warm Stage Observations on Initial Development of Avian Tubercle Bacillus Cultivated in Embryo Extract. E. M. Brieger and H. B. Fell.—p. 158.
Analysis of Complement Fixation Reaction in Influenza. L. Hoyle. —p. 170.
Isolation of Salmonella Thompson from Outbreaks of Disease in Chicks. R. F. Gordon and A. Buxton.—p. 179.
Diphtheria in Hull: Review of Six Years' Bacteriologic Typing. H. M. Leete.—p. 184.
Bacteriology of Dehydrated Fish: I. Qualitative and Quantitative Studies of Drying Process. J. M. Shewan.—p. 193.
Studies in Dynamics of Disinfection: III. Reaction Between Phenol and Bacterium Coli: Effect of Temperature and Concentration with Detailed Analysis of Reaction Velocity. R. C. Jordan and S. E. Jacobs.—p. 210.
Note on Wartime Health of Women in Industry and at Home. D. C. Wilson.—p. 221.

Journal of Neurol., Neurosurg. & Psychiatry, London

8:1-48 (Jan. and April) 1945

Metabolic Factors Affecting Fibrillation in Denervated Muscle. B. Feinstein, R. E. Pattle and G. Weddell.—p. 1.
Neurosis and Sexuality. E. Slater.—p. 12.
Exploratory Study of Mental Organization in Senility. Margaret D. Eysenck.—p. 15.
Cyclic Oculomotor Palsy. I. S. McGregor.—p. 22.
Observations on Effect of Centrifugal Force in Man. W. K. Stewart.—p. 24.
Night Visual Capacity of Neurotic Soldiers. W. L. Rees.—p. 34.
Lesions of Central Nervous System in Herpes Zoster. I. R. S. Gordon and J. F. Tucker.—p. 40.

Lancet, London

2:325-356 (Sept. 15) 1945

*Prefrontal Leukotomy: Report of 100 Cases. F. Berliner, R. L. Beveridge, W. Mayer-Gross and J. N. P. Moore.—p. 325.
*Toxemia of Gas Gangrene. R. G. MacFarlane and J. D. MacLennan.—p. 328.
Mud Fever in British Army in France. F. E. Buckland and R. D. Stuart.—p. 331.
Typhoid Fever in Immunized Personnel. J. Jordan and H. E. Jones.—p. 333.
Acute Sinusitis and Otitis Media Treated with Sulfonamides: Two Illustrative Cases. S. W. G. Hargrove.—p. 335.
Chemotherapy in Experimental Tetanus. D. G. Evans, A. T. Fuller and J. Walker.—p. 336.

Prefrontal Leukotomy.—In the 100 cases in which Berliner and his associates performed prefrontal leukotomy the criterion for selection was the presence of "mental tension." This concept of mental tension may be described as a persistent emotional charge which is always of an unpleasant quality, invariably distressing and sometimes intolerable to the patient. Its presence is shown by irritability, rage, fear or other forms of emotional excitation, insomnia, restlessness, aggressiveness, destructiveness or impulsive behavor. Eighty-eight of the 100 cases presented schizophrenia, the remainder melancholia, obsessional states, epilepsy or hallucinosis. The authors used the operative technic described by Freeman and Watts. Urinary incontinence was present in many cases for periods varying from a few days to a few weeks, but it never lasted more than five weeks. Fecal incontinence was observed in a few instances during the postoperative confusional stage. Epileptiform fits occurred in 2 cases but did not continue. All signs of postoperative organic disturbance of memory, orientation or other intellectual functions were transient except in 1 patient. Recovery indicates ability to leave the hospital, live at home under normal conditions and resume some form of useful employment, not necessarily up to former standards. Twenty-nine patients can be regarded as recovered. Sixteen are much improved; that is, they do useful work in the hospital. Twenty-five are improved; many of these who were serious nursing problems before operation now take part in occupational and recreational therapy or do simple work in the hospital or on the farm. Fourteen patients have improved slightly, and this has usually meant the loss of certain troublesome features of their illness such as violent or impulsive behavior, faulty habits or destructiveness; other symptoms persist. Twelve patients may be regarded as unchanged and remain in approximately their preoperative state. Four of the 100 patients died after the operation. The impression of other workers that the best results are achieved in cases showing signs of "mental tension" is supported by this series.

Toxemia of Gas Gangrene.—MacFarlane and MacLennan suggest that there are two different substrates in the muscle, the trypsin soluble, toxin insoluble protein of the fiber and the toxin soluble, trypsin insoluble framework on which the structural integrity of the muscle depends. The latter substance, whether it is derived from the sarcolemma or from the perimysial connective tissue, is presumably formed of collagen. This supposition was supported by the finding that toxin would lyse finely teased collagen fibers derived from human tendon even in dilutions up to 1 in 64. A "collagenase" has been identified in Clostridium welchi toxin. The possibility that the general toxemia of gas gangrene is not due to alpha toxin but to the products of tissue breakdown has been studied, and evidence in favor of this theory has been obtained. Even the largest doses of antitoxin will not alleviate the toxemia of gas gangrene as long as the local destruction of muscle is proceeding. A possible relationship has been noted between the toxemia of gas gangrene and that seen in other forms of shock.

Medical Journal of Australia, Sydney

2:133-164 (Aug. 4) 1945

Scrub Typhus: Clinical Aspects. C. B. Sangster and H. B. Kay.—p. 138.
Pathologic Aspects of Scrub Typhus in New Guinea. V. McGovern.—p. 146.

2:165-196 (Aug. 11) 1945

Poverty, Housing and Health. W. O. Burt.—p. 167.
Slide Modification of Eagle Flocculation Test. N. E. Goldsworthy, F. Simpson and H. K. Ward.—p. 173.
*Staphylococcic Fasciitis: Its Relation to Penicillin Therapy. K. W. Starr.—p. 176.
Some Observations on Use of Trichorethylene in Anesthesia. A. L. B. Webb.—p. 177.
Device for Intravenous Anesthesia. R. V. Pratt.—p. 179.
*Muscle Hernia. M. Kelly.—p. 180.
Improvised Apparatus for Intramuscular Administration of Penicillin. R. C. White.—p. 181.

Staphylococcic Fasciitis and Penicillin Therapy.—Starr found that in a group of battle casualties soft tissue sinuses persisted. There were often multiple openings in the skin from which small amounts of seropus were discharged daily. This pus yielded hemolytic Staphylococcus aureus. For a time penicillin therapy diminished the discharge and appeared to control the infection, but recrudescence was constant. All patients had been subjected to repeated surgical intervention. This condition is a subacute staphylococcic infection of fascioaponeurotic planes with progressive necrosis of the tissue and is analogous to subacute staphylococcic infection of bone. Starr describes 6 cases of this type and the successful management of 5 of them. Surgical intervention is not undertaken unless the hemoglobin value, red blood cell count and hematocrit estimations are normal. Preoperative instillation of penicillin solution (2,500 Oxford units per cubic centimeter) is employed for three to seven days until the infection is controlled and the culture material is negative for staphylococci. At operation a wide exposure is necessary, and all sinuses are made to communicate with the main cavity. When the skin and fat are undermined, the fascia is exposed. The fat is often hard and edematous, and primary healing in these cases is difficult to secure. The fascia has a dead white or mottled appearance and is thickened and hard. It is in fact a "fascial sequestrum." Its eradication is essential. The resulting cavity is often very large, but its wall is not infrequently composed of muscle bellies and heals rapidly. Tubes are inserted into the cavity for postoperative local penicillin therapy. This is required for about seven days. No buried sutures are inserted except for the ligation of large vessels. The wound is closed with interrupted stainless steel wire sutures, which are left in place for two weeks.

Muscle Hernia.—Small defects in the fascial sheath usually cause aching pain and cramping. Sometimes, however, these defects occur without symptoms. The muscles of the anterior tibial group, particularly the tibialis anterior, are most frequently involved. In 4 of the 6 cases described in this paper the anterior tibial group was involved, the anterior aspect of the forearm being the site of the defect in the remaining 2. Though the hernia is often caused by an injury, more frequently it is related to the less acute but more prolonged trauma of excessive walking. These cases show two unusual responses to mild trauma: (1) failure of a small defect in the deep fascia to heal and (2) muscular dysfunction with pain. It is well known that even major defects in the deep fascia almost invariably heal, as is evidenced by the reforming of the fascia lata after the removal of large strips. There seems to be no doubt that the failure of the fascia to unite causes disorder of muscular function with consequent aching pain. McMaster treated 8 cases by surgical repair but was not enthusiastic about the results. Attempts have been made to close the fascial defect by injections of sodium morrhuate, with improvement in symptoms for a few months only. Kelly made no attempt to treat his patients.

Practitioner, London

155:129-192 (Sept.) 1945

Standards of Food Requirements. J. R. Marrack.—p. 129.
Nutrition from Standpoint of Public Health. E. H. M. Milligan.—p. 138.
Diet and the School Child. R. E. Smith.—p. 144.
Cooking and the Nutritional Value of Food. G. N. Jenkins.—p. 149.
Hospital Diet. Ruth Pybus.—p. 156.
Sleep in Health and in Illness. S. W. Smith.—p. 161.
Impending Dissolution. W. N. Leak.—p. 170.
Eye Diseases in East. J. Minton.—p. 176.

Proceedings of Royal Society of Medicine, London

38:545-612 (Aug.) 1945

*Anesthesia in Operations for Closure of Patent Ductus Arteriosus. J. Gillies.—p. 545.
Preparation of Diabetic Patient for Operation. G. Graham.—p. 547.
Radiology of Small Intestine. J. Wilkie.—p. 551.
Physical Basis of Radiant Heat Therapy. D. S. Evans and K. Mendelssohn.—p. 578.
Orbital Tumors. H. Jackson.—p. 587.
Anatomy of Thoracic Outlet in Relation to "Irritation" and Compression of Nerve Trunks. G. Weddell.—p. 601.

Anesthesia in Operations for Patent Ductus Arteriosus.—In his experience, which has been limited to twenty-one ligations, Gillies says that anesthesia for the uninfected and younger subjects presented little difficulty. It is familiar knowledge that children tolerate thoracotomy better than older subjects. Patients with infection were in a critical condition during operation. Adequate oxygenation may be difficult because of patchy areas of consolidation in the lungs as a result of emboli from the infected vessels. Although the management of the anesthesia for this operation is not essentially difficult, it must be of such quality that the surgeon receives maximum assistance in his delicate manipulations. The quietest respiration consistent with good oxygenation must be maintained. A high oxygen content helps oxygenation by continuous diffusion into the alveoli when respiratory excursion is reduced. Quiet breathing will also minimize mediastinal movement. Cyclopropane has been employed almost entirely in this series, with satisfactory results. The use of a tracheal tube is not essential but is a comforting safeguard against mechanical obstruction of the airway. Complete deflation, especially under prolonged pack or retractor pressure, sometimes causes difficulty in reexpanding the lung. Jones interrupts the operation in order that the anesthetist may reinflate the lung for a few seconds every ten minutes. This is a definite aid in facilitating the final reexpansion at the end of the operation and of mitigating postoperative pulmonary complications.

Presse Médicale, Paris

53:489-500 (Sept. 15) 1945. **Partial Index**

*Total Carbon Dioxide Content of Plasma in Shock and Hemorrhage. L. Binet and M. V. Strumza.—p. 489.
Terminoterminal Anastomosis After Subtotal Gastrectomy. J. Huguier and C. L. Chatelin.—p. 490.
Daily Vitamin C Requirement of Patient with Tuberculosis of Serous Membranes. Comparison of Ingestion with Blood Rate. H. Gounelle and A. Vallette.—p. 491.
Penicillin Therapy of Subacute Bacterial Endocarditis. L. de Gennes and L. Cournot.—p. 492.

Carbon Dioxide Content of Plasma.—Binet and Strumza studied the total carbon dioxide content of the plasma in dogs which were anesthesized by chloral and in which shock was produced by repeated injections of histamine. First a rapid and later a slower but progressive decrease in blood alkali was demonstrated. A fall of alkali to 50 per cent of its initial value was observed within one hour. As a measure of blood alkali, analysis for total carbon dioxide was made and a decrease of the carbon dioxide to 14.7 and to 12.7 per cent by volume was demonstrated within seven to seven and a half hours after shock was induced. In additional experiments, moderate and extensive hemorrhages were produced in anesthesized dogs. Isotonic solution of sodium chloride was administered to those dogs which had lost three fifths of their total blood. In the dogs subjected to hemorrhage, the carbon dioxide varied from 32 to 13 per cent by volume and the lowest value was observed within seven hours after the hemorrhage. In spite of the administration of isotonic solution of sodium chloride, the decrease of the carbon dioxide content and of the alkali in the blood continued in the dogs subjected to profuse hemorrhage. Good initial results were obtained by adding 4 Gm. of sodium bicarbonate per thousand cubic centimeters to the isotonic solution of sodium chloride. Repeated bicarbonate injections were required to prevent a later fall of the carbon dioxide content and to maintain a normal blood alkali as long as the posthemorrhagic anemia was not attenuated.

Monatschrift f. Geburtshilfe u. Gynäkologie, Basel

119:281-332 (June) 1945

Studies on Serum Iron: I. Serum Iron in Healthy Women During Latter Part of Pregnancy, Parturition and Puerperium. S. Dahl.—p. 281.
*Problem of Malignancy of Granulosa Cell Tumors. E. Glatthaar.—p. 304.
New Method for Revival of Asphyctic Newborn Infants. N. Erez.—p. 313.

Malignancy of Granulosa Cell Tumors.—Glatthaar describes a case of granulosa cell tumor of the ovary which was clinically malignant but microscopically had the structure of a benign granulosa cell tumor. Laparotomy disclosed an enlarged uterus and bilateral, nodulated, apparently malignant tumors of the ovaries, which already had caused extensive metastases. The tumors and metastases were extirpated and the uterus was amputated. Microscopic examination revealed that the bilateral ovarian tumors were granulosa cell tumors. Highly differentiated tissues were interspersed with some of a more diffuse structure. The metastases showed essentially the same structure. The clinical aspects of this case were definitely malignant but the microscopic structure was that of a benign granulosa cell tumor. Since the microscopic appearances are not reliable in cases of granulosa cell tumors, the therapy must be governed by the clinical features.

Acta Dermato-Venereologica, Stockholm

25:289-387 (Feb.) 1945

Effect of Caloric Stimulation on Reticuloendothelial Cells of Skin. P. Gróf.—p. 289.
Case of Rothmund's Disease. J. Knap.—p. 302.
Pediculosis Capitis Treated with Acetum Staphidis Agriae and Tinctura Staphidis Agriae. J. D. Magnussen and H. Debes Joensen.—p. 322.
Fulminant Acute Gangrene of External Genital Organs. N. Melczer.—p. 338.
Clinical Features and Etiology of Gangrenous Degeneration of Various Skin Inflammations. N. Melczer.—p. 350.
*Deteriorating Therapeutic Effect of Sulfathiazole in Gonorrhea. G. Seeberg.—p. 361.
*Local Treatment of Gonorrhea with Sulfathiazole: Clinical Investigation. G. Seeberg.—p. 380.

Sulfathiazole Resistance in Gonorrhea.—Seeberg studied uniform material from outpatient wards comprising 3,428 patients, 2,930 of whom were men and 498 women. They all had an uncomplicated form of gonorrhea for which they had received one period of intensive sulfathiazole treatment. The recurrence frequency among men rose from 15 per cent at the beginning of 1941 to 70 to 80 per cent at the end of 1943 and remained at the latter figure during the first months of 1944. Among the women the incidence of recurrence rose from 30 per cent at the beginning of 1943 to 70 per cent at the close of the same year. The recurrence frequency was about the same for those infected in Stockholm and for patients infected outside the city. Recurrences were diagnosed by culture and by microscopic examination of direct specimens as late as the fourth week in men and the eighth week in women. This observation shows the necessity for an effective control period following the treatment. The explanation for the deteriorating results reflected in the rising recurrence frequency seems to lie in the fact that an increasing number of strains of gonococci have become chemoresistant.

Local Sulfathiazole Therapy of Gonorrhea.—Seeberg reports the results of treatment of 86 gonorrhea patients with sulfathiazole by local application. Sixty-four of the patients were men and 22 were women. Ten cc. of 15 per cent microcrystalline sulfathiazole suspended in water was injected into the urethra of the men. The patient retained this suspension for ten minutes. The treatment was repeated six times daily for seven days. One sulfathiazole suppository was introduced into the urethra and one into the rectum of the women six times daily, and one suppository was inserted in the cervical canal twice a day for seven days. With local treatment only, gonorrhea was cured in 8 of 30 men, while there were no cures among the 9 women treated by the local application. With combined local and oral treatment, gonorrhea was cured in 12 of 34 men and 5 of 13 women. In the majority of the cases local application of sulfathiazole had no therapeutic effect. The reason for this is believed to be an increased chemoresistance of the gonococci.

Book Notices

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1944, with the Comments That Have Appeared in The Journal. Cloth. Price, $1. Pp. 238, with 50 illustrations. Chicago: American Medical Association, 1945.

This volume was originally designed as a complement to another publication of the Council, New and Nonofficial Remedies, the latter designed to list and describe preparations found acceptable by the Council, the former to explain why the Council found certain preparations unacceptable. The annual reprint was also designed to contain reports of other deliberations of the Council as well as comments that appeared in THE JOURNAL. The present volume is quite unusual in that it contains not one report concerning a product found unacceptable. However, there are five reports on the omission of products from New and Nonofficial Remedies, mainly for the reason that they have outlived their usefulness, and in most cases the manufacturers have expressed their lack of desire for continued inclusion of their brands. These reports are Erysipelas Streptococcus Antitoxin and Antierysipelas Serum Omitted from New and Nonofficial Remedies; Ichthammol Preparations, Isarol, Ichthynat, Ichthyol, Omitted from New and Nonofficial Remedies, and Soluble Ichthammol Not Within the Scope of New and Nonofficial Remedies; Iodine Compounds Iodalbin and Stearodine, Iodo-Casein, Iothion and Iodostarine Omitted from New and Nonofficial Remedies; Mercuric Oxycyanide, Mercuric Salicylate and Mercuric Succinimide Omitted from New and Nonofficial Remedies, and Status of Antimeningococcic Serum and Meningococcus Antitoxin.

This volume is a veritable mine of information on subjects of general interest to the physician, pharmacist and the pharmaceutical manufacturer. The reports concern deliberations of the Council on general subjects ranging from the use of the electron microscope to the appraisal of new drugs. The report on Pathogenic Bacteria, Rickettsias and Viruses as Shown by the Electron Microscope is noteworthy as being pioneer work in this field. The report on the Current Status of Prophylaxis by Hemophilus Pertussis Vaccine was prefatory to the acceptance by the Council on various brands of pertussis vaccines and pertussis vaccine combinations. The valuable and highly informative article on Local Treatment of Thermal Cutaneous Burns reports the latest and best work in this field.

Voluntary Health Agencies: An Interpretive Study. By Selskar M. Gunn and Philip S. Platt. With a foreword by Louis I. Dublin. Under the auspices of the National Health Council. Cloth. Price, $3. Pp. 364. New York: Ronald Press Company, 1945.

This book is a study under the auspices of the National Health Council made possible by financial support from the Rockefeller Foundation.

For many years there has been a growing feeling in public health circles that too many voluntary health organizations exist and that their programs, financing and other relationships are spotty, unequal, overlapping and not well proportioned to needs in the several fields. The organization of the National Health Council itself was an effort to correct these conditions. The National Health Council was apparently premature, since the desired objectives were not obtained. This study was initiated to learn as much as possible about existing types of voluntary health agencies at the federal, state and local level and making recommendations as to how these might be strengthened, consolidated or coordinated. The directors of the study, under whose authorship the book is published, are both experienced in various phases of public health work in the United States and elsewhere. They were well fitted by experience and training to undertake such a study. With the aid of a field worker, they visited numerous communities and talked with the executives or other officers of hundreds of typical health agencies. It was impossible to talk to a representative of each of the twenty-two thousand known voluntary health agencies in the United States.

The book is a description of the problem from the standpoint of what constitutes a voluntary health agency, what its social values and functions are and where such voluntary agencies lack. Among reasons why they lack, the human factor is of tremendous importance. Recommendations are presented as to how the effectiveness of health agencies might be increased. Considerable attention is devoted to statewide and nationwide organizations. A chapter is devoted to the professional organizations, namely the American Public Health Association, the National Organization for Public Health Nursing, the American Medical Association, the American Dental Association and the National Safety Council. The description of the American Medical Association, its organization, purposes and activities is one of the few fair factual and objective presentations relating to this organization which can be found.

The remedies proposed for confusion, duplication, overlapping and gaps in the voluntary health field include close coordination beginning at the federal level with an ultimate goal of a unified health program and wide coordination of the national health agencies. An overall fund raising and coordinate body similar to the National War Fund is suggested.

Any one who has experienced the multiplicity of health agencies at federal, state and local levels and the almost innumerable "health projects" essayed by agencies whose primary objective is something other than a health program cannot help but be interested in this study. The authors have been courageous in their study and in their recommendations. If they receive the attention which they ought to receive, and anything approaching the action recommended, the entire public health movement should derive great benefits.

Nutrition and Relief Work: A Handbook for the Guidance of Relief Workers. Published by the Council of British Societies for Relief Abroad. Cloth. Price, 70 cents. Pp. 111, with illustrations. New York, London & Toronto: Oxford University Press, 1945.

This small book represents an effort on the part of certain British war relief agencies with the cooperation of British nutritionists to provide a manual on nutrition of use in relief feeding. It begins with a brief discussion of the energy requirements of various occupational activities. The functions of the vitamins essential for human nutrition and the quantities needed daily are given as well as the symptoms of vitamin deficiencies. An outline of methods for determining the nutritional adequacy of a population includes the gathering of data on food consumption and examination of the representative groups with particular reference to certain objective findings which are listed. Further practical information relating to problems met in caring for the European peoples, such as differing dietary habits, storage and handling of foodstuffs, makeshift cooking arrangements and descriptions of the different currencies and systems of measurement, is to be found in the manual. Diagrams of cooking units, large scale recipes and tables of food values add to the usefulness of the book. The concise form of its nutritional discussion and the assembled facts regarding foods and their handling make the work of more than passing interest or use for the limited purpose for which it was prepared.

A Text-Book of Neuro-Anatomy. By Albert Kuntz, Ph.D., M.D., Professor of Micro-Anatomy in St. Louis University School of Medicine, St. Louis. Fourth edition. Cloth. Price, $6.50. Pp. 478, with 328 illustrations. Philadelphia: Lea & Febiger, 1945.

This excellent book on neuroanatomy contains twenty-six chapters. It starts with evolution and comparative anatomy of the nervous system and concludes with the functions of the cerebral cortex. This edition is thoroughly revised and parts of it are rewritten. New data have been inserted without increasing the size of the text. Some new and improved illustrations with more complete designations have been added. This is a good book for the medical student because it is written simply and is based on the premise of structure and function. This is the ideal way of presenting a subject like neuroanatomy. The book is highly recommended.

Poor Man's Doctor. By Lewis R. Tryon, M.D. Cloth. Price, $2.75. Pp. 233. New York: Prentice-Hall, Inc., 1945.

Many a horse and buggy doctor has been telling the story of his life with much public interest. The author of this biography was born in Pennsylvania in 1872. His career brought him into the work of the Red Cross in Estonia. His travels took him pretty well around the world, yet he was always a doctor for the people. The story is told simply and directly with little artistic elaboration but with a good deal of humor and humanity.

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Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BREAST CANCER AND PREGNANCY

To the Editor:—**Should a three months pregnancy be terminated in a patient with Paget's disease of the nipple? If so, should the breast excision be done first or the interruption of pregnancy?** **Captain, M. C., A. U. S.**

ANSWER.—It seems logical to remove the breast promptly and to follow the surgery by irradiation if this course is decided on. The fate of the pregnancy would depend on several factors, such as the extent of the breast lesion, the desirability of a baby and the duration of the pregnancy. There is no unanimity of opinion concerning the role of the endocrines in breast cancer. There is some evidence that continued ovarian function favors neoplastic growth and decreases the likelihood of a cure. This has not been proved. If it is true, pregnancy, which is associated with an increase in the estrogen level of the blood, would be inimical to a favorable outcome.

If a woman who has had children is seen early in her pregnancy with a carcinoma of the breast, one could do a hysterectomy and bilateral salpingo-oophorectomy after the breast has been cared for, thereby removing ovarian function. If the same patient is seen in midpregnancy, she can be carried to viability of the child and the pregnancy then terminated by a porro cesarean section and the removal of the adnexa. In the event that the lesion of the breast is extensive when the patient is first seen, interference with the pregnancy would be of doubtful value.

PRESCRIBING SUGAR IN THE DIET

To the Editor:—**It has recently been brought to my attention that some doctors are prescribing sugar. Under what conditions should one prescribe sugar, for what diseases?** **J. O. Chiapella, M.D., Chico, Calif.**

ANSWER.—The conditions for which prescription of sugar is indicated are limited to those in which hypoglycemia exists. This may occur spontaneously in the presence of adenomas or other tumors of the pancreas or with pituitary, hepatic or adrenal disorders as well as with lesions of the central nervous system and emotional disturbances. An overdose of insulin in a diabetic patient would produce hypoglycemia.

The oral use of sugar in the treatment of low blood sugar should be limited to emergencies. It is no longer considered desirable to administer sugar prophylactically at intervals throughout the day, because ingestion of carbohydrate stimulates the islet cells to produce more insulin. Restriction of carbohydrate with a high fat or high protein diet has been found successful.

While quantities of lactose and other sugars may be recommended in the diets of patients with febrile conditions such as typhoid, to supply caloric value it is necessary to provide adequate amounts of the B complex vitamins to take care of the sugar. It would not be appropriate to advocate building up the caloric content of the diet with sugar to give a healthy person more energy or to increase the body weight.

UNDULANT FEVER IN LACTATING MOTHERS

To the Editor:—**It has been my policy to recommend to lactating mothers with undulant fever that they should not nurse their newborn babies. Doubt has been expressed as to whether or not this is sound advice.** **Cecil A. Z. Sharp, M.D., Joliet, Ill.**

ANSWER.—The available information relating to this query is small in amount and possibly inadequate as a basis for routine advice to all lactating mothers. In the light of present knowledge it seems advisable to prohibit nursing if the mothers have symptoms and signs of brucellosis throughout pregnancy or during the early postpartum period, and to permit infants to nurse if by appropriate therapy the mothers have been maintained free from symptoms not only during pregnancy but also during the early puerperium. Valuable information is found in the paper "Undulant Fever in Children," by Hagebusch and Frei (*Am. J. Clin. Path.* **11**:497 [June] 1941).

INTESTINAL PUTREFACTION

To the Editor:—**Will you please advise me how to eliminate putrefaction in the bowel and stool. Give references if possible.** **E. R. Hargett, M.D., Springfield, Ohio.**

ANSWER.—Assuming that there is no obvious functional or organic derangement of the secretory and motor functions of the gastrointestinal tract and no protozoal infection or metabolic or other systemic disorder present, treatment along one of several lines may be undertaken. A tablespoon of lactodextrin (a proprietary mixture of lactose, dextrin and lemon juice) three times daily and a glass of acidophilus buttermilk twice daily has been recommended. The former is dissolved in a large glass of hot water and preferably taken an hour before each meal. In order to keep the flora changed, adequate daily evacuation of the bowels is deemed essential. This may be accomplished by the use of agar, bran, one of the plantago products or enemas in addition to the ingestion of fresh and stewed fruits, greens and such vegetables as lettuce, celery, cabbage, beets and parsnips. If tolerated, bulky or laxative foods may be used in liberal quantities, not once a day only but at every meal. According to Kellogg, the daily ingestion of proteins should not exceed minimal requirements, and meats of all sorts, including fowl and fish, should be excluded. The well cooked yolk of fresh eggs is permitted. On the basis of investigations carried out by Van der Reis purporting to show the deleterious effect of bacteria migrating from the colon to the upper reaches of the small intestine and colonization there, Rosell advocates transduodenal irrigations by living lactic acid bacterial cultures and the ingestion of generous quantities of yogurt and kefir. Other preparations that may be used singly or in addition to those already mentioned are kaolin, alumina, di-hydranol and sodium ricinoleate (soricin).

The theory that intestinal toxemia is the cause of disease is a controversial matter, and its proponents are at present on the defensive. This is strikingly shown by the fact that there has been a substantial decrease in the contributions to the subject in the past fifteen years. In the opinion of Power and Sherwin and numerous contemporaries, the human organism is provided with a chemical defense mechanism, nonspecific in character, which is more than adequate for the detoxication of the small amount of putrefactive products normally produced in the human intestine by the action of putrefactive bacteria or unabsorbed protein material. In fact, the usual bacterial flora may even be of benefit by preventing the implantation of pathogenic organisms.

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URTICARIA FROM PENICILLIN

To the Editor:—**A patient aged 35 years has had chronic osteomyelitis for the past twenty years. The process has involved the fourth lumbar vertebra, the left humerus and the sternum. There have been intermittent exacerbations. The most recent one involved the spine. It started as it had on numerous other occasions with malaise, low grade fever and rather severe low back pain. On the third day treatment with penicillin was started. The dosage was 30,000 units every three hours day and night. All symptoms subsided by the end of the third day. The administration of penicillin was continued, however, for a total of nine days, at which time the patient developed the most extensive case of hives that I have ever seen. Following recovery from the hives, the patient has been quite well. If this osteomyelitis shows evidence of flaring up again, is it safe to administer penicillin again? What is the likelihood of a similar reaction to this drug recurring? Should the dosage be altered in any way?** **M.D., Pennsylvania.**

ANSWER.—The reaction which is described occurs in about 2 per cent of patients who receive penicillin for a period of ten to fourteen days. If the patient needs penicillin in the future, it might be well to use an entirely different preparation; that is, a preparation of another manufacturer. In some of the cases that have been reported, a similar reaction has occurred when the drug is given a second time. In others it has not. It is suggested that, if penicillin is given in the future, the patient should be watched carefully after each dose, and, if urticaria should appear, the drug should be discontinued.

TOXICITY OF AMPHETAMINE

To the Editor:—Is there not a pharmacologic similarity between some of the actions of amphetamine and those of cocaine? Both may cause cerebral stimulation or excitement, diaphoresis, tachycardia, rise of systolic pressure and wakefulness. This strong resemblance has never received much comment in the literature. Has such comparison ever been made? Cocaine used steadily in time usually results in complete or nearly complete impotence. Has such an end result ever been ascribed to amphetamine? Several years ago The Journal described the death of a student after taking about 15 mg. of amphetamine. Have any other fatalities been reported?

M.D., Illinois.

ANSWER.—The signs and symptoms caused by cocaine are similar to those due to stimulation of the sympathetic nervous system; the analogy is not perfect, however. Sollmann in his "Manual of Pharmacology" points out that the symptoms of cocaine poisoning resemble those of ephedrine. Ephedrine is closely related to amphetamine, except that the latter has much less vasopressor effect. Waud (THE JOURNAL, Jan. 15, 1938, p. 206) reported that, in the absence of collapse, the toxic effects of large doses of amphetamine resemble excessive stimulation of the sympathetic nervous system.

Ephedrine is known to prevent erection in some patients. The parasympathetic vasodilator fibers in the pelvic nerves (nervi erigentes) are the nerves of erection. Ephedrine stimulates vasoconstrictor nerve endings and probably in this way prevents erection in some subjects. Libido in man is reported to be increased in some subjects. Since it has been observed that amphetamine, like ephedrine, tends to inhibit erection, the augmentation of libido is probably due to the elevation of mood caused by the amphetamine (Ivy, A. C., and Krasno, L. R.: Amphetamine (Benzedrine) Sulfate: Review of Its Pharmacology, *War Med.* **1**:15 [Jan.] 1941).

Collapse after large doses (30 to 450 mg.) has been frequently reported. Some patients have tolerated as much as 160 to 200 mg. a day; on the contrary, several apparently normal subjects have collapsed after taking 30 mg. at one dose. The student referred to in the question had apparently taken only 30 mg. within five days and 10 mg. a few hours prior to collapse and death, the cause of death being conjectural. Since then apparently only one other death ascribed to amphetamine has been reported. Hertzog, Karlstrom and Bechtel (THE JOURNAL, Jan. 23, 1943, p. 256) reported the death of a child 12 months old who had swallowed 40 mg. or more of amphetamine plus an unknown amount of ferrous sulfate tablets.

VACCINATION FOR INFLUENZA

To the Editor:—In the Army in Arkansas wholesale vaccinations are being given for influenza. The virus is cultured in the allantoic sac of the egg. Where can I get some information on this vaccine? Can it be used on children and if so what is the dosage?

William J. Schirmer, Captain, M. C., A. U. S.

ANSWER.—The description of the character of the vaccine being employed against influenza and information concerning its use are published in detail in the *American Journal of Hygiene* **42**:1-105 (July) 1945. This constitutes a series of seven papers which provide data as to its use. The material can be used for children, but the amount should probably be reduced, although accurate determination of the reactions in children with such preparations has not been made. Additional care should be taken to avoid individuals sensitive to eggs.

GLUCOSE ADMINISTRATION IN CEREBRAL HEMORRHAGE

To the Editor:—Is the administration of glucose indicated in apoplexy, even when the patient is unconscious? Should not fluids be restricted to avoid more damage to the brain?

J. O. Helm, M.D., New Florence, Mo.

ANSWER.—The value of any active treatment during the coma stage of cerebral hemorrhage is arguable. The occurrence of such a major crisis, however, prompts a great desire to do something. One of the reactions to cerebral hemorrhage is the occurrence of cerebral edema. It is assumed that the intr oduction of a hypertonic glucose solution into the circulation reduces the cerebral edema by the transport of fluid from the tissues to the blood stream. The introduction of such glucose is followed by a considerable diuresis. To bring this about, 50 cc. of a 50 per cent solution of glucose is introduced intravenously. It is doubtful that this amount of fluid, less than 2 ounces, will upset the dynamics of the circulation.

The introduction of large amounts of glucose solution into the circulation is not good treatment. If it is necessary to replace fluids, another avenue should be used and, to introduce food, tube feeding or even rectal feeding should be employed rather than intravenous injection.

LUPUS ERYTHEMATOSUS—BISMUTH IN HYPERTENSION

To the Editor:—A facial lesion of a year's duration in a woman aged 45 was diagnosed lupus erythematosus after biopsy; gold therapy was outlined by a competent dermatologist. For the past six years the systolic pressure has been 180 to 200 and the diastolic 105 to 120. She has a history of illness suggestive of acute rheumatic fever, but there has been no evidence of involvement of the heart while she has been under my care. However, the sedimentation rate is consistently 20-24 mm. in one hour. Having heard of the use of bismuth subsalicylate in oil in the treatment of lupus erythematosus, I would appreciate a comparison of its effectiveness and safety in a patient with hypertension and possible rheumatic heart history.

Hubert C. Miller, M.D., Racine, Wis.

ANSWER.—Bismuth subsalicylate in oil has been tried by a number of clinicians for the treatment of lupus erythematosus but without encouraging results. The cause of this disease is unknown, and there is no theoretical reason why this preparation should be effective in arresting or ameliorating the clinical manifestations of the disease. Although there are no contraindications to the use of bismuth subsalicylate because of the possible existence of rheumatic heart disease, there may be some hazard in using it on a patient with arterial hypertension. An accelerated arteriosclerosis (so-called malignant hypertension) has been observed to follow the administration of bismuth to patients with essential hypertension. Bismuth may also damage the renal convoluted tubules, especially when administered to patients with a febrile illness such as lupus, which is often associated with considerable toxic damage to the renal parenchyma and specific necrosis of renal arterioles and capillaries.

HEALING OF WOUNDS AND LOW VITAMIN C INTAKE IN ICELAND

To the Editor:—I am interested in the problem of nutrition where there is a shortage of vitamin C. In The Journal June 30, 1945 there is an article on this subject from your correspondent in Iceland, and I was wondering whether they have made any investigations on the healing of wounds, having in mind especially the low vitamin C intake. I am now making an extensive study of the causes of delayed healing, referring especially to late post-tonsillectomy hemorrhage. Are there any reports on the incidence of this condition among the Icelanders?

Harry Neivert, M.D., New York.

ANSWER.—In spite of the low intake of vitamin C in Iceland, delayed healing of wounds has not been observed—at least not in any degree diverging from what is considered normal in other countries.

The only people in whom this condition has been seen in a striking degree are the leprous. A sutured wound in a patient with leprosy is frequently hardly glued together after seven days. In these patients the vitamin C content has been found lower than in the general population, the urinary excretion being as a rule below 10 mg. per day and not infrequently as low as 6 mg.

Hemorrhages after tonsillectomies are rare, occurring in only 1 to 2 per cent of the cases. Experienced doctors who have been trained abroad are convinced that these hemorrhages are no more frequent than elsewhere, if not less so.

STORAGE OF PENICILLIN

To the Editor:—Please inform me how rapidly penicillin in powder will lose its potency if kept in an atmospheric temperature of around 25 C. Efficient refrigeration is often difficult to obtain nowadays in the Philippines, especially in the field.

Jose F. Tangco, Captain, M. C., Manila, P. I.

ANSWER.—Penicillin in powder form may be kept at a temperature of around 25 C. and retain its potency for at least six months, perhaps longer, if the drug is kept in protected package form.

HYPERTENSION AND CERVICAL RIB

To the Editor:—In the answer to a query published in The Journal Nov. 24, 1945, page 916, a cervical rib was mentioned as a probable cause of tingling sensations in the shoulder. It was reported that the patient presented an arterial tension of 185/110, but no mention is made as to whether the blood pressure was symmetrical in the two arms. Asymmetry of the arterial tension is so common in cases of cervical rib that the latter lesion always should be suspected when asymmetry is discovered, even if otherwise the patient is asymptomatic. The pressure is usually much lower on the side on which symptoms of cervical rib occur. Hypertension on the opposite side may be compensatory; this has been demonstrated in at least 1 case (Propst, D. W., and Stieglitz, E. J.: Differential Arterial Tension, *Am. J. M. Sc.* 184: 336 [Sept.] 1932), in which freeing of the cervical rib reduced the hypertension on the opposite side. It is an excellent rule to determine the blood pressure on both arms at least once with every patient. If found symmetrical (within 5 mm. of mercury) this procedure need not be repeated. Asymmetry is not discovered unless searched for.

Edward J. Stieglitz, M.D., Washington, D. C.